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IDENTIFIERS	African Americans

ABSTRACT

These 15 newsletters from the National Research Center on the Gifted and Talented (NRC/GT) contain the following articles: (1) "National Research Needs Assessment Process" (Brian D. Reid); (2) "NRC/GT: Update of Year 2 Activities" (E. Jean Gubbins); (3) "Parents: Their Impact on Gifted Adolescents" (Julie L. Sherman); (4) "Cluster Grouping Fact Sheet: How To Provide Full-Time Services for Gifted Students on Existing Budgets" (Susan Winebrenner and Barbara Devlin); (5) "'But You're a Man!!!' Exploring the Role of Identification in Role Model and/or Mentor Relationships" (Jonathan Plucker); (6) "Thinking Skills in the Regular Classroom" (Deborah E. Burns); (7) "Dynamic Assessment and Its Use with High Ability Students" (Robert J. Kirschenbaum); (8) "When 'Differentiated' Becomes Disconnected from Curriculum" (E. Jean Gubbins); (9) "Changing the Way We Perceive 'Creativity'" (Jonathan A. Plucker); (10) "Examining a Tool for Assessing Multiple Intelligences" (Cheryll M. Adams and Carolyn M. Callahan); (11) "Gender Differences between Student and Teacher Perceptions of Ability and Effort" (Del Siegle and Sally M. Reis); (12) "Motivating Our Students: The Strong Force of Curriculum Compacting" (Heather Allenback); (13) "Extending the Pedagogy of Gifted Education to All Students" (Sally M. Reis, Marcia Gentry, and Sunghee Park); (14) "Valuing, Identifying, Cultivating, and Rewarding Talents of Students from Special Populations" (David St. Jean); and (15) "A Parent's Guide to Helping Children: Using Bibliotherapy at Home" (Mary Rizza). (AA)

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THE NATIONAL RESEARCH CENTER
ON THE
GIFTED AND TALENTED (NRC/GT) NEWSLETTER

June 1991 - Winter 1997
(15 Issues)

Editors:
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Del L. Siegle

The University of Connecticut
The National Research Center on the Gifted and Talented
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G/T

The National Research Center on the Gifted and Talented

NEWSLETTER

June 1991

THE UNIVERSITY OF CONNECTICUT·THE UNIVERSITY OF GEORGIA·THE UNIVERSITY OF VIRGINIA·YALE UNIVERSITY

NRC/GT Newsletter: *Purpose and Scope*

The staff of the National Research Center on the Gifted and Talented is pleased to present the premier issue of our newsletter. The newsletter will serve various audiences. The first audience consists of all persons involved in our Collaborative School Districts. The second audience is general education and gifted education professionals and parent groups that have expressed an interest in our activities. The third audience is the community of scholars engaged in research on the gifted and talented. We have created a forum for scholars and practitioners to present abstracts of research in progress, brief articles and commentary, and summaries of books, articles, and research reports. In this way, the newsletter serves more than just our immediate need to disseminate information about the Center.

In this issue, we have highlighted the overall organization and the mission of the Center. And, we have presented brief summaries of the current research studies in progress. Beyond the Center activities, we solicited contributions from members of our Consultant Bank in these three categories:

- **Research In Progress**
  Abstracts of approximately 200 words describing research activities. These abstracts may also contain requests for sites/subjects, information about identification and program development, or any other material that might enhance research in progress.
- **Brief Articles and Commentary**
  Material in this category should deal with some aspect of research or the application of research in practical situations. Articles should be approximately 500 words in length, and they should also contain invitations for further contact with the researcher.
- **Just Off the Press**
  Articles in this category should highlight books, articles, and research reports recently completed. Journal references, publishers' addresses, or procedures for obtaining these materials should be included. Emphasis should be given to translating research findings into practice. Articles in this category should be approximately 500 words and include invitations for additional contact.

We are pleased to present submissions in these categories from our initial request of Consultant Bank members. We also extend an invitation to our readers to prepare materials for our newsletter and forward them to our editorial staff.

We have entertained suggestions for other columns for future newsletters. If the following are of interest to you, please send us your submissions:

- Dr. Enid Zimmerman of Indiana University would like to see a column highlighting successfully implemented identification systems, curricula, evaluation procedures, and school/ community collaborations. Articles should be approximately 500 words in length, and they should contain invitations for further contact with you.
- Dr. Zimmerman would like a column which is interactive: questions about topics of interest would be submitted and responses would be sought from our constituents.
- Dr. Carolyn Callahan, Associate Director of the NRC/GT at the University of Virginia, thinks a point/counterpoint column entitled "On the One Hand ......On the Other Hand" would be of interest to readers. Commentary of 100 words in length would present one side of an issue and this would be forwarded to another person for a response from another perspective.

Send your newsletter submissions to:
The National Research Center on the Gifted and Talented
NRC/GT Newsletter
The University of Connecticut
362 Fairfield Road, U-7
Storrs, CT 06269-2007

Rationale for The National Research Center

The history and culture of a nation can be charted to a large extent by the contributions of its most gifted and talented citizens. America has enjoyed a long and rich history of creative productivity. However, in recent years our nation's preeminence has been placed at risk, as much by decaying standards and performance in our educational system as by intensified competition from abroad. If we are to continue to maintain a position of world leadership, it is imperative that a significant portion of our educational resources be invested in those young people who have the highest potential for making creative contributions to the arts and sciences and to all fields of human endeavor in which imagination, invention, and unique solutions to pressing problems are required. It is also imperative that opportunities for the development of high potential be extended to the vast number of young people that frequently have been excluded from traditional programs for the gifted because of race, gender, socioeconomic background, or limited conceptions about the nature and development of giftedness.

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What is the Mission of the National Research Center on the Gifted and Talented (NRC/GT)?

The National Research Center on the Gifted and Talented (NRC/GT) is a collaborative effort of The University of Connecticut, The University of Georgia, The University of Virginia, Yale University, 54 state and territorial departments of education, over 260 public and private schools, over 100 content area consultants, and stakeholders representing professional organizations, parent groups, and businesses. The funding for the Research Center has been provided by the Office of Educational Research and Improvement, United States Department of Education, under the Jacob K. Javits Gifted and Talented Students Education Act of 1988.

The mission of The National Research Center on the Gifted and Talented is to plan and conduct theory-driven quantitative and qualitative research that is problem-based, practice-relevant, and consumer-oriented. Our mission includes a broad-based dissemination function, and the formation of a nationwide cooperative of researchers, practitioners, policy makers, and other persons and groups that have a stake in the psychology and education of high-potential youth from preschool through post-secondary levels. Emphasis will be placed on identifying the research needs of economically disadvantaged youth, individuals of limited English proficiency, individuals with handicaps, and other special populations that traditionally have been underserved in programs for gifted and talented students. The Center will also serve as a vehicle for providing the kinds of intellectual leadership necessary for the further stimulation, advancement and improvement of theory, research and practice in the field. In this regard, the Center will serve as an integrated forum for scholars and practitioners to come together and to pool their resources. Moreover, it will welcome contributions from, and output to, scholars in cognate fields, in order to enhance communication and interchange between scholars in multiple disciplines whose interests relate to giftedness.

How Will the Mission of the NRC/GT Be Carried Out?

To accomplish the Center's mission, the following components presented in Figure 1 are as follows:

The Directorate. The Directorate, located at the University of Connecticut, is the major administrative, coordinating, and dissemination unit for all activities.

Participating Universities. The four universities that comprise The National Research Center on the Gifted and Talented are the Universities of Connecticut, Georgia, Virginia, and Yale University. The Associate Directors at the respective universities are Dr. Francis X. Archambault, Dr. Mary M. Frasier, Dr. Carolyn M. Callahan, and Dr. Robert J. Sternberg. They are involved in several studies focusing on identification, program development, program evaluation, culturally diverse populations, classroom practices, curriculum modifications for gifted students, and cognition and learning.

Collaborative School Districts. Over 260 public and non-profit private elementary and secondary school districts representing various ethnic, demographic and socioeconomic groups throughout the country serve as the major research sites.

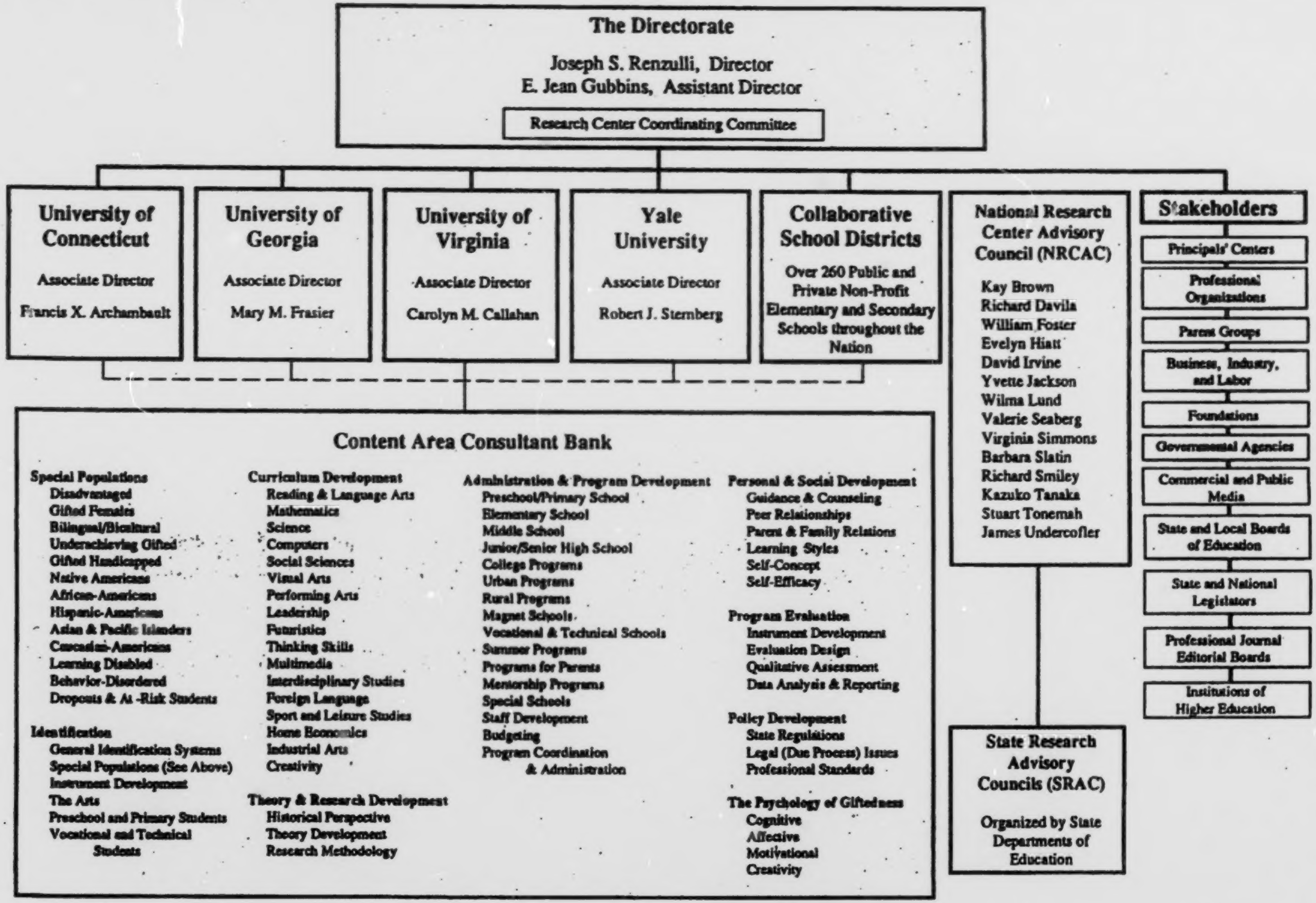
Advisory Councils. State and National Advisory Councils synthesize research needs assessment information from school districts, state departments, the Collaborative School Districts and the Stakeholders. The major leadership in the advisory process is provided by state department of education consultants in the area of education for the gifted and talented.

The Research Center Coordinating Committee. The Directorate, Associate Directors, representatives from the Collaborative School Districts, and a representative from the National Advisory Council are members of the Research Center Coordinating Committee. The major function of this committee is to make recommendations for the Center's future research agenda.

Stakeholders. Representatives from professional organizations, parent groups, private sector groups, governmental agencies and policy makers who have an interest in the education of gifted and talented students provide input into the needs assessment, advise the Center on related issues such as restructuring and policy making data needs, and assist in dissemination though their publications and conferences.

Content Area Consultant Bank. Individuals with specialized backgrounds in all areas of psychology, education, and related disciplines serve as consultants, and they have the opportunity to participate in research projects.

Figure 1. The National Research Center on the Gifted and Talented



The Directorate

Joseph S. Renzulli, Director
E. Jean Gubbins, Assistant Director

Research Center Coordinating Committee

University of Connecticut
Associate Director
Francis X. Archambault

University of Georgia
Associate Director
Mary M. Frasier

University of Virginia
Associate Director
Carolyn M. Callahan

Yale University
Associate Director
Robert J. Sternberg

Collaborative School Districts
Over 260 Public and Private Non-Profit Elementary and Secondary Schools throughout the Nation

National Research Center Advisory Council (NRCAC)

Kay Brown
Richard Davila
William Foster
Evelyn Hiatt
David Irvine
Yvette Jackson
Wilma Lund
Valerie Seaberg
Virginia Simmons
Barbara Slatin
Richard Smiley
Kazuko Tanaka
Stuart Tonemah
James Undercofler

State Research Advisory Councils (SRAC)
Organized by State Departments of Education

Stakeholders

- Principals' Centers
- Professional Organizations
- Parent Groups
- Business, Industry, and Labor
- Foundations
- Governmental Agencies
- Commercial and Public Media
- State and Local Boards of Education
- State and National Legislators
- Professional Journal Editorial Boards
- Institutions of Higher Education

Content Area Consultant Bank

Special Populations
- Disadvantaged
- Gifted Females
- Bilingual/Bicultural
- Underachieving Gifted
- Gifted Handicapped
- Native Americans
- African-Americans
- Hispanic-Americans
- Asian & Pacific Islanders
- Caucasian-Americans
- Learning Disabled
- Behavior-Disordered
- Dropouts & At -Risk Students

Identification
- General Identification Systems
- Special Populations (See Above)
- Instrument Development
- The Arts
- Preschool and Primary Students
- Vocational and Technical Students

Curriculum Development
- Reading & Language Arts
- Mathematics
- Science
- Computers
- Social Sciences
- Visual Arts
- Performing Arts
- Leadership
- Futuristics
- Thinking Skills
- Multimedia
- Interdisciplinary Studies
- Foreign Language
- Sport and Leisure Studies
- Home Economics
- Industrial Arts
- Creativity

Theory & Research Development
- Historical Perspective
- Theory Development
- Research Methodology

Administration & Program Development
- Preschool/Primary School
- Elementary School
- Middle School
- Junior/Senior High School
- College Programs
- Urban Programs
- Rural Programs
- Magnet Schools
- Vocational & Technical Schools
- Summer Programs
- Programs for Parents
- Mentorship Programs
- Special Schools
- Staff Development
- Budgeting
- Program Coordination & Administration

Personal & Social Development
- Guidance & Counseling
- Peer Relationships
- Parent & Family Relations
- Learning Styles
- Self-Concept
- Self-Efficacy

Program Evaluation
- Instrument Development
- Evaluation Design
- Qualitative Assessment
- Data Analysis & Reporting

Policy Development
- State Regulations
- Legal (Due Process) Issues
- Professional Standards

The Psychology of Giftedness
- Cognitive
- Affective
- Motivational
- Creativity

What is the Research Agenda of the Center?

The Research Center has adopted a mission that demands the interaction of scholars and practitioners from various disciplines to plan and implement problem-driven research. The research studies for Year 1 are described below.

Research Needs of the Gifted and Talented Through the Year 2000

The University of Connecticut *Principal Investigators: Dr. Joseph S. Renzulli and Brian D. Reid*

This study deals with a comprehensive assessment of research needs in the 50 states and territories. Local and state level groups that are representative of the full range of educational personnel and representatives of parent groups, policy making groups, and members of the private sector have been asked to respond to a survey instrument organized around factors that define the field (e.g., Identification, Curriculum, Policy Development). In order to ensure representativeness of subgroups within the population such as ethnic minorities, non-public schools, vocational/technical schools, and the arts, a stratified random sample was used to gather and analyze needs assessment data. The results will be reported by various sub-populations, demographic characteristics, and the 10 factors around which the survey instrument was developed. The needs assessment results will become the basis for creating future research projects for the Center.

Regular Classroom Practices with Gifted and Talented Students

The University of Connecticut *Principal Investigator: Dr. Francis X. Archambault*

This study inquires into the nature of regular classroom practices used with gifted and talented students through an extensive national survey of 7,000 teachers and intensive observation of 50 classrooms. The national survey will provide information on the frequency with which certain instructional practices are used with traditionally identified gifted students as well as less frequently identified students who are economically disadvantaged, have limited English proficiency, represent certain ethnic groups, or have particular handicapping conditions. The survey will also provide data on the extent to which practices used with gifted students differ from those used with other students located in the same classroom, and whether these differences relate to characteristics of the district, the classroom, or the teacher providing the instruction. The classroom observation portion of the study replicates some of the data acquired through the survey, thereby providing a validity check. It will also provide more detailed information on classroom dynamics, teacher/student interactions and teaching modifications than is permitted by the survey.

Theoretical Plan for Modifying the Regular Curriculum for Gifted and Talented Students

the University of Connecticut *Principal Investigator: Dr. Sally M. Reis*

Since research indicates that the challenge level of textbooks is declining and that teachers often use whole-class instructional techniques, curriculum modification is necessary to meet the needs of gifted and talented students in regular classroom settings. One technique that has been designed to accomplish this goal is entitled curriculum compacting (Renzulli, Reis, & Smith, 1981) which involves elimination of skills students have already mastered and replacement of more challenging work that is often selected by the students. The research study concerning curriculum compacting uses three experimental groups of classroom teachers involved with different methods of training in the compacting technique (i.e., handbook, videotape, inservice training, simulations, and peer coaching) and a control group of classroom teachers that continues with their normal teaching practices. The effects of personal variables, professional variables and participation in training sessions on teachers' use of curriculum compacting will be examined. Other variables to be studied include student achievement, attitude toward learning and subject area preference.

An Investigation of Giftedness in Economically Disadvantaged and Limited English Proficient Students

the University of Georgia *Principal Investigator: Dr. Mary M. Frasier*

The University of Georgia will investigate distinguishing characteristics of Economically Disadvantaged (ED) and Limited English Proficient (LEP) students who display various potentials but who are not identified for gifted programs. The purposes of this study are to: (a) approach the identification of gifted economically disadvantaged and limited English proficient students from an intensive investigation of gifted behaviors within and across cultural groups; (b) examine giftedness in target students by analyzing the development of intellectual processes and functioning within the cultural context; and (c) focus on the strengths in children from diverse cultures in order to understand their gifts and talents.

Investigations into Instruments and Designs Used in the Identification of Gifted Students and the Evaluation of Gifted Programs

The University of Virginia *Principal Investigator: Dr. Carolyn M. Callahan*

The University of Virginia will establish a National Repository for Instruments and Strategies used in the Identification of Gifted Students and the Evaluation of Gifted Programs. Existing instruments, systems and designs used in identification and evaluation will be collected through a nationwide survey. In addition, a paradigm will be created for evaluating the identification instruments in light of the wide variety of definitions and conceptions of giftedness. Non-traditional and product/performance instruments currently in use in evaluation of gifted programs will also be reviewed for their usefulness. Potentially useful instruments will be investigated through formal validation processes.

Evaluation of the Effects of Programming Arrangements on Student Learning Outcomes

The University of Virginia *Principal Investigators: Dr. Dewey Cornell and Dr. Marcia A. B. Delcourt*

This study represents the first major national attempt to assess the effects of gifted and talented programs on learning outcomes for elementary students. Academic and affective learning will be evaluated within four popular types of program grouping arrangements: within-classroom programs; pull-out classroom programs; separate classroom programs; and separate schools. The sample of students includes those from a variety of geographic locations as well as individuals representing minority and disadvantaged populations. Data collection sources include students, teachers, and parents, while results focus upon assessments of achievement, attitudes toward school, self-concept, intrinsic-extrinsic motivation, student activities, and behavioral adjustment.

A Theory-Based Approach to Identification, Teaching, and Evaluation of the Gifted

Yale University *Principal Investigator: Dr. Robert J. Sternberg*

Three major aspects of gifted education will be studied -- identification, teaching, and student evaluation -- within one integrated investigation. The study is based on Sternberg's Triarchic Theory (1985), which postulates three aspects of intellectual ability: analytic, synthetic-creative, and practical-contextual. Identification of students who are gifted in one of each of these areas (as well as those who are balanced among the three abilities, and a control group) will be followed by instruction tailored to the various abilities. In order to determine the effects of these interventions, equal numbers of students with each kind of giftedness will receive each kind of instruction, and all students will be evaluated through all assessment methods. First year activities include development of the alternative versions of introductory psychology materials, and establishing the construct validity of the Sternberg Triarchic Abilities Test for use with gifted populations.

Basic Tenets of Our Research

We believe we can develop empirically sound identification instruments and systems that will more effectively include students not identified by traditional assessment methods. Accordingly, one of our priorities will be to seek and create multiple assessment techniques, such as new tests, qualitative and performance-based assessment systems and tools, such as inventories and student profiles, and other non-traditional identification methods.

We believe that we can improve existing programs by conducting research that will assess the impact of various curriculum approaches, methods of grouping gifted and talented students within classrooms and schools, and various ways of meeting the affective needs of these students. We will gather evidence of what works best for the diverse group that constitutes our nation's gifted and talented students.

We believe that results of effective research should be used to guide policy development for the education for traditionally identified and underserved gifted and talented students. Sound, validated policy is needed at the local, state and national level to implement and maintain programs for this population. The research we conduct will be helpful in developing such policy.

Continued on page 12

The Collaborative School Districts: Sites for Our Research

The National Research Center on the Gifted and Talented is engaged in a "new brand" of educational research and dissemination with the needs of the practitioners guiding the studies. The multi-site, single year and longitudinal research studies are possible because of the cooperation of Collaborative School Districts. The Collaborative School Districts are the sites where the research will be conducted. Additional school districts may become involved in present or future research studies. The specific responsibilities of Collaborative School Districts follow:

1. To serve as locations at which research data can be gathered.
2. To provide co-investigators who will participate in the design of research studies and who will serve as on-site managers of individual research projects.
3. To provide locations where visitations can be arranged to observe successful practices in operation, to participate in the preparation of consumer-oriented guidebooks and video training tapes, and to provide technical assistance to the school districts that express interest in replicating successful practices.
4. To assist in the documentation of biographical information about subjects so that contacts can be maintained for longitudinal follow-up studies.
5. To participate in the overall process of evaluating the effectiveness of the Center.

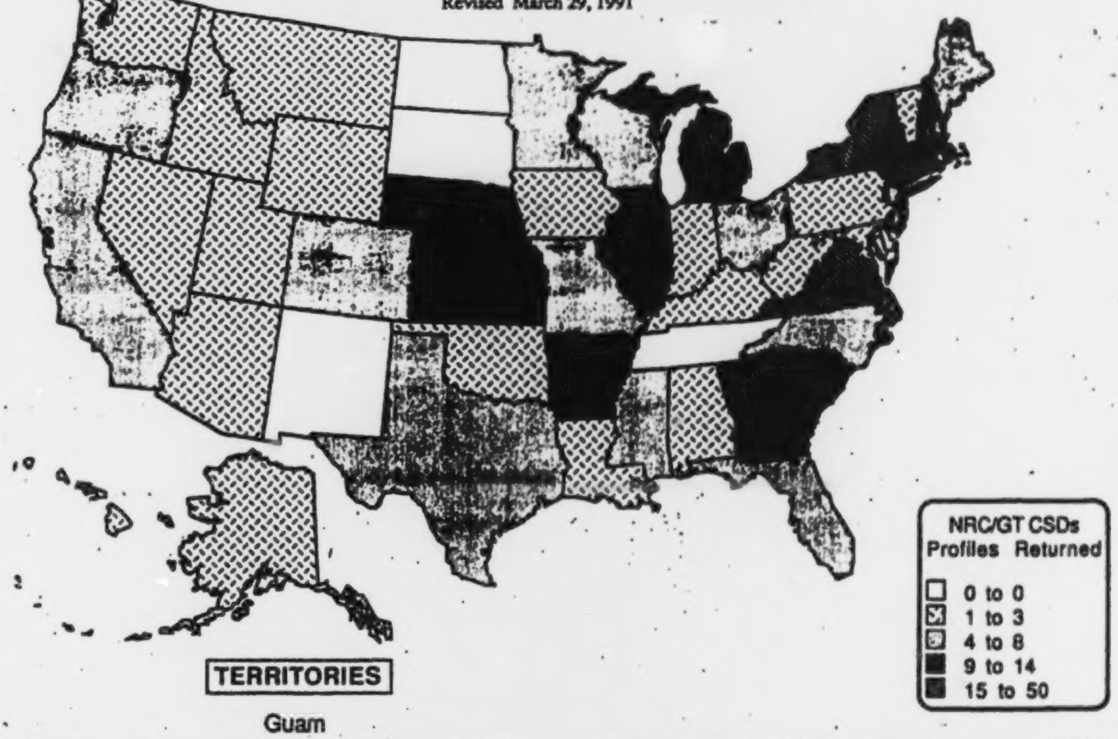
The Collaborative School Districts will be involved in state-of-the-art research studies emanating from the perceived needs of practitioners and research scholars. The type of and extent of involvement will vary from study to study. Collaborative School Districts will benefit from the opportunity to:

1. Receive announcements of materials and staff development opportunities for teachers and students;
2. Participate in experimental curriculum;
3. Network with other school districts throughout the country;
4. Access an electronic bulletin board on the latest research information in the field;
5. Receive copies of the NRC/GT newsletter summarizing the latest research activities;
6. Provide guidance and direction for the establishment of state and national policies for gifted and talented education;
7. Receive copies of all products produced by the Center on a cost-recovery basis; and,
8. Access national databases for research purposes.

Some studies evaluate program outcomes, others experiment with different teaching techniques, and still others involve an assessment of classroom practices. Whatever the extent of involvement in a study, districts are making a contribution to the future directions of the field. As of March 1991, there are over 260 districts, representing 45 states and 1 territory, that have agreed to participate in the Center's activities. We would like to have every state and territory involved with some aspect of our work over the next four years. If you know of a contact in a school district from one of the following states or territories, please contact us: Delaware, North Dakota, New Mexico, South Dakota, Tennessee, Puerto Rico, Virgin Islands, American Samoa, and Trust Territory.

Collaborative School Districts (n=262)

Revised March 29, 1991



Content Area Consultant Bank Members

As of March 1991, the following people have been invited to participate in the Content Area Consultant Bank based on their research and leadership in the field. The activities in which Consultant Bank members might participate include: research project consultation, consultation referrals, national research needs assessment, and principal investigators of special topics.

Dr. Willard Abraham
Arizona State University

Dr. William Asher
Purdue University

Dr. Susan Assouline
The University of Iowa

Dr. Susan Baum
College of New Rochelle

Dr. Camilla Benbow
Iowa State University

Dr. John Borkowski
University of Notre Dame

Dr. James Borland
Columbia Teachers College

Dr. Janet Boyle
Indiana University/Purdue Univ.

Dr. Paul Brandwein
Unionville, NY

Dr. Norman Breyer
Vernon, CT

Ms. Ruthan Brodsky
Roeper City & Country School

Dr. Linda Brody
Johns Hopkins University

Dr. Nina Kay Buchanan
University of HI at Hilo

Dr. Kyle Carter
University of Northern Colorado

Dr. Raymond Cattell
University of Hawaii

Dr. Richard E. Chandler
Math & Science Summer Inst.,Texas

Dr. Barbara Clark
CA St. Univ. at Los Angeles

Dr. LeoNora Cohen
University of Oregon

Dr. Sanford Cohn
Arizona State University

Dr. Gary L. Confessore
The University of Oklahoma

Dr. Anne Borland Crabbe
St. Andrew College

Dr. Rita Culross
Louisiana State University

Dr. James Curry
University of Southern Maine

Dr. Gary Davis
University of Wisconsin

Dr. James Delisle
Kent State University

Dr. Peggy Dettmer
Kansas State University

Dr. Margaret Ann Dirkes
Indiana University/Purdue University

Dr. Linda Emerick
University of St. Thomas

Dr. Carolyn Falk
Mattatuck Community College

Dr. John Feldhusen
Purdue University

Dr. David Feldman
Tufts University

Dr. David Fetterman
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Dr. Patricia Hollingsworth
University of Tulsa

Dr. Nancy Jackson
University of Iowa

Dr. Paul Janos
University of Washington

Dr. Reva Jenkins-Friedman
University of Kansas

Dr. Lannie Kanevsky
McGill University

Dr. Frances Karnes
University of Southern Mississipi

Dr. Cathy Kass
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Dr. Felice Kaufmann
Lexington, KY

Dr. Sandra Kay
Pine Tree School, NY

Dr. Dorothy Kennedy
University of Wisconsin - Stevens Point

Dr. Barbara Kerr
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Dr. Joe Khatena
Mississipi State University

Dr. M. K. Kitano
San Diego State University

Dr. Penny Kolloff
Cranbrook Schools, MI

Dr. Karen Lee
Boston University

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University of Ottawa

Dr. Susan Linnemeyer
University of Illinois

Dr. Mary Meeker
S.O.I. Systems, Oregon

Dr. Bruce Mitchell
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Dr. Sidney M. Moon
Purdue University

Dr. Alan D. Moore
University of Wyoming

Ms. Nancy Mobre
Richmond, VA

Dr. Kathleen Noble
University of Washington

Dr. Frances Settle O'Tuel
University of South Carolina

Dr. Richard Olenchak
The University of Alabama

Dr. Paula Olszewski-Kubilius
Northwestern University

Dr. Beverly Parke
Wayne State University

Dr. Jeannette Parker
University SW Louisiana

Dr. Harry Passow
Columbia University

Dr. Philip Perrone
University of Wisconsin-Madison

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Northland College, WI

Dr. Barbara Pilon
Worchester State College

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University of British Columbia

Dr. Michael Pyryt
University of Calgary

Dr. Cecil Reynolds
Texas A&M University

Dr. Susanne Richert
Clearinghouse/Gifted, NJ

Dr. Sylvia Rimm
Educational Assessment Service, Inc.

Dr. Ann Robinson
University of Arkansas at Little Rock

Dr. Nancy Robinson
University of Washington

Dr. Karen Rogers
University of St. Thomas

Dr. Jonathan Rubin
Boston Children's Hospital

Dr. Mark Runco
California State University

Mr. Irving Sato
NSLTI, California

Dr. Gina Schack
University of Louisville

Dr. Ellie Schatz
WI Ctr. /Academically
TalentedYouth

Dr. Carol Schlichter
University of Alabama

Dr. Beverly Shaklee
Kent State University, OH

Dr. Linda Kreger Silverman
University of Denver

Dr. W. Thomas Southern
Bowling Green St. University

Dr. Alane Starko
Eastern Michigan University

Dr. Morris Stein
New York University

Dr. Emily Stewart
Dallas Independent Schools

Dr. Carol Story
Johnson St. College

Dr. Rena Subotnik
Hunter College, CUNY

Dr. Raymond Swassing
Ohio State University

Dr. Carol Addison Takacs
Cleveland State University

Dr. Abraham Tannenbaum
Columbia University

Dr. Terry Thomas
California State University

Dr. Ellis Paul Torrance
GA Studies of Creative Behavior

Dr. Donald Treffinger
Ctr. for Creative Learning, FL

Dr. Herbert Walberg
University of Illinois at Chicago

Dr. Joseph Walters
Harvard University

Dr. James Webb
Wright State University

Dr. Shirley J. Weddel
Cherry Creek Schools, CO

Dr. Joan Wolf
University of Utah

Dr. Enid Zimmerman
Indiana University

National Research Needs Assessment Process

Brian D. Reid, University of Connecticut

The National Research Center on the Gifted and Talented (NRC/GT) was conceived as a vehicle to bring together all segments of the gifted education community to develop a consensus regarding research needs, and to work collaboratively to plan and conduct research deemed to have the greatest significance to the field. In accordance with this objective, a national research needs assessment process was developed to determine the research needs of practitioners in the field.

Research in the field of gifted education, and educational research in general, has been initiated by the interests of individual researchers and graduate students rather than practitioners in the field (Renzulli, et al, 1989). According to Weaver & Shonkoff (1978), however, little thought has been given to whether educational research has addressed the immediate concerns or needs of practitioners. If the research carried out by the NRC/GT is going to have an impact on the field, it had to be viewed as relevant by the consumers of research in education. In order to pursue this goal of greater impact through the enhancement of consumer relevance, it was important to allow practitioners to have a part in determining the most important research to be conducted within the field (Kagan, 1989; Husén, 1984). As Moore (1987) has pointed out, "Planning for organizational change should involve those who are likely to be affected by the change" (p. 30).

If educational practice is to be changed or modified by research, practitioners must become partners in making decisions about important areas of research needs as well as in the planning and conducting of research directed toward the improvement of school and classroom practices. However, a history of poor relationships between schools and universities has created a rift that has made collaborative research difficult. Researchers build theories and seemingly lack empathy for the problems encountered by teachers. Teachers tend to discount educational research because of the researcher's unwillingness to provide practical solutions to problems (Renzulli, in press). The rationale for collaboration was plainly evident. Teachers possess important knowledge about the classroom milieu that researchers often do not understand, and researchers are better able to provide a systematic approach that practitioners are usually not aware of through their own experiences (Floden & Klinzing, 1990). A process that melds these two disparate perspectives should provide better research and better implementation of the research. Moore (1987) describes several reasons for using groups in conducting research. Most importantly, he believes that a group was more likely to accept research findings if they have participated in the process, especially if the research has political implications. "If you want to effect policy, it was wise to include those responsible for acting on the policy" (p. 16).

The plan of operation of the NRC/GT was to use the results of the needs assessment as a starting point to provide input for local, state, and national groups of practitioners that are directly and indirectly involved in programming for the gifted and talented. The NRC/GT intends to create a network of stakeholders and practitioners who, having participated in the research process, are better able to use the information provided.

The intent of the needs assessment study was to include as many people as possible in the process. According to McKillip (1987), the use of multiple methods of assessing needs in the human services and education is essential. This requirement dictates the use of a multilevel and multitechnique assessment. The needs assessment process was a departure from previous needs assessments and was made up of several different stages. As a result of the decision to include very large numbers, a mailed questionnaire was used to gather data. The data were collected from the survey and "filtered" through the State Research Advisory Council (SRACs) to the National Research Center Advisory Council (NRCAC) (see Figure 1). The final product was a list of recommendations prepared by the NRCAC.

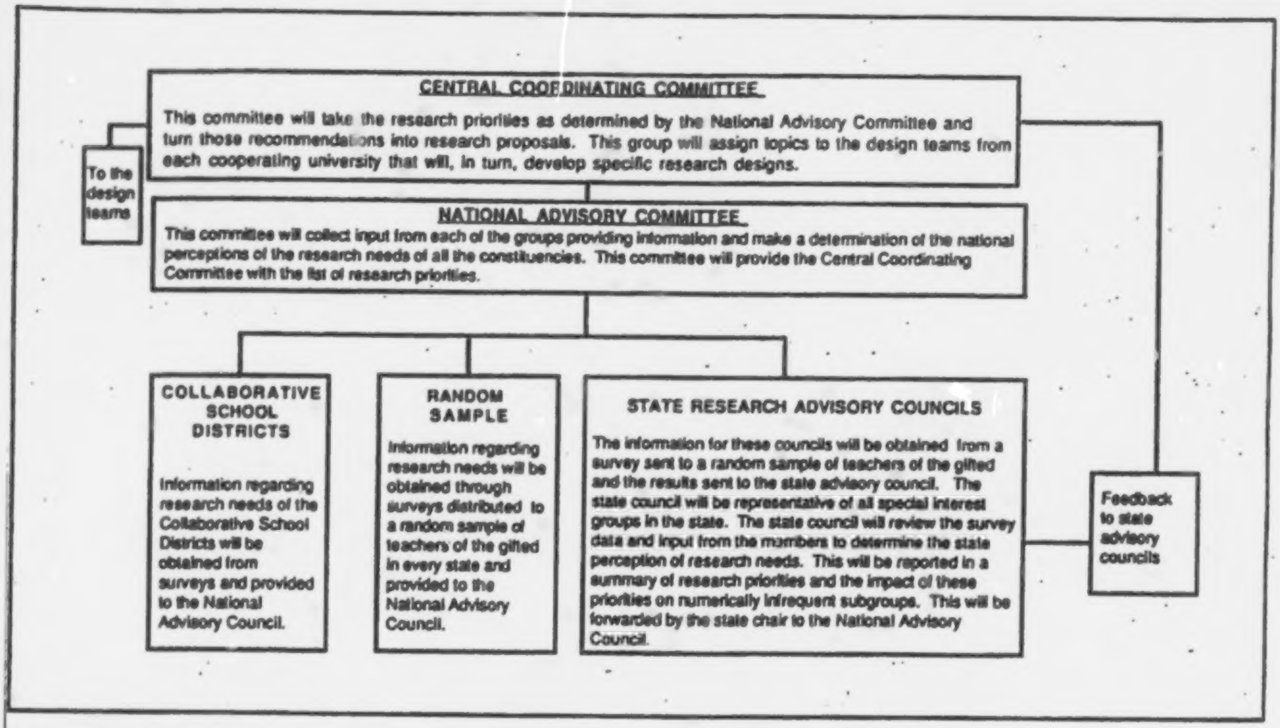
The first step in the process of developing research recommendations through this advisory process was to identify key groups that should respond to the research needs assessment survey. This survey was designed for teachers of the gifted, classroom teachers, school administrators, parents, school board members, and others active in the delivery of services to bright students. The next step was the dissemination of surveys to the targeted groups. Surveys were mailed to the Collaborative School Districts (CSD), and distributed in a systematic manner to teachers of the gifted, classroom teachers, administrators, parents, and others involved in the gifted program. Surveys were also mailed to a random sample of teachers of the gifted stratified by state as well as national parent groups, state department of education personnel and SRACs, national educational organizations, and others as located.

The second step in the needs assessment process was to use the data from the surveys to create a list of state research needs. After the surveys were returned, a summary of the responses was distributed to State Research Advisory Councils. The members of these councils represent the arts, vocational and technical education, private schools, urban and rural programs, gifted females, ethnic minorities, handicapped gifted, preschool and primary students, at-risk students and any other population present in the state. These councils were charged with the responsibility of clarifying the research priorities within the state based on the surveys. Each SRAC generated a list of research topics that were of the highest importance in their respective states.

The data from the SRACs were provided to the National Research Center Advisory Council. This group was composed of 12 persons who are recognized leaders in education. They represent minority populations, non-public schools, the arts, and vocational and technical students. Five members of this group are regionally elected representatives of the state departments of education. Representatives also participated from Collaborative School Districts, the Consultant Bank and the Office of Educational Research and Improvement. This group used the state research priorities and the actual data from the survey to develop a national list of research priorities.

The final NRCAC list of recommendations for research is included in Table 1. These topics were determined to be the most important topics for research in gifted education. These recommendations were used in planning the research for the second year of the National Research Center. In addition to the continuation of these first year projects: *Investigations into Instruments and Designs Used in the Identification of Gifted Students and the Evaluation of Gifted Programs*, and *Evaluation of the Effects of Programming Arrangements on Student Learning Outcomes* (University of Virginia); *A Theory-Based Approach to Identification, Teaching and Evaluation of the Gifted* (Yale University), several new studies were planned. These studies will be *A Study of Successful Classroom Practices, Longitudinal Study of Classroom Practices, Case Studies of Gifted Students with Learning Disabilities Who Have Achieved*, and *Cooperative Learning and the Gifted* (University of Connecticut Site); *A Research-Based Assessment Plan (RAP) for Assessing Giftedness in Economically Disadvantaged Students* (University of Georgia Site); *Qualitative Extension of the Learning Outcomes Study* (University of Virginia Site); and *Motivation and Underachievement in Urban and Suburban Gifted Preadolescents* (Yale University Site).

Figure 1. Needs Assessment Process NRC/GT



CENTRAL COORDINATING COMMITTEE

This committee will take the research priorities as determined by the National Advisory Committee and turn those recommendations into research proposals. This group will assign topics to the design teams from each cooperating university that will, in turn, develop specific research designs.

NATIONAL ADVISORY COMMITTEE

This committee will collect input from each of the groups providing information and make a determination of the national perceptions of the research needs of all the constituencies. This committee will provide the Central Coordinating Committee with the list of research priorities.

COLLABORATIVE SCHOOL DISTRICTS

Information regarding research needs of the Collaborative School Districts will be obtained from surveys and provided to the National Advisory Council.

RANDOM SAMPLE

Information regarding research needs will be obtained through surveys distributed to a random sample of teachers of the gifted in every state and provided to the National Advisory Council.

STATE RESEARCH ADVISORY COUNCILS

The information for these councils will be obtained from a survey sent to a random sample of teachers of the gifted and the results sent to the state advisory council. The state council will be representative of all special interest groups in the state. The state council will review the survey data and input from the members to determine the state perception of research needs. This will be reported in a summary of research priorities and the impact of these priorities on numerically infrequent subgroups. This will be forwarded by the state chair to the National Advisory Council.

Table 1

NRCAC List of Prioritized Recommendations

1. Impact of gifted programs on student outcomes (longitudinal)
2. Regular curriculum modifications
3. Teaching training/staff development necessary for curriculum modification or development
4. Grouping patterns and impact on learning outcomes
5. Individual vs curriculum approaches to education
6. Motivation
7. Effectiveness of differentiated programs for economically disadvantaged, underachieving and other special populations

8a. Self efficacy
8b. Cultural/community reinforcement
10. Policy implications
11a. Teachers as assessors
11b. Grouping by special populations
13. Program options in relation to student characteristics, settings, training, articulation
14. Process vs content
15. Use of research in assessment
16. Impact understanding of gifted/talented "differences"
17. Effects of grouping on all students when gifted are grouped
18. Assumptions/stereotypes of underachievement
19. Student characteristics associated with success
20. Cooperative learning
21. Relationship between community and program

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Talented and Gifted Education in Rural Alaska: A Universal Model

Linda L. Manwill, Lower Kuskokwim School District, Bethel, Alaska

The Lower Kuskokwim School District covers an area of 44,000 square miles and is located in Southwestern Alaska. The school system consists of twenty-six schools; three in the City of Bethel and twenty-three located in outlying villages. All school sites are accessible by air except one. There are no highway systems and the only access to the area is by airplane year round and by boat for four months out of the year.

Of the student population of approximately 2,900 one-third attend schools in Bethel, a city of about 5,000 inhabitants. The student composition is: 75% Yup'ik Eskimo, 20% Caucasian, 5% is Native American Indian/Black/Hispanic/Asian/other. The composition of students in the villages which range in size from two to six hundred is: 95% Yup'ik or Chupik Eskimo and 5% other.

The majority of villagers depends on fishing and hunting (subsistence lifestyle) for survival. This type of lifestyle impacts directly on the education system in a cultural and a practical manner.

Therefore, during the 1988-89 school year the Plan of Service for Talented and Gifted Education was revised to more fully meet the needs of students who live in this area. The essential factor in the redesign was to cross over cultural boundaries and take the bias and horrendous stress which can be a monumental inhibitor to the identification process out of the Plan of Service. The new design is a radical departure from a standardized system typically used to identify those possessing outstanding abilities.

Six ability areas are investigated through the identification criteria. These areas are Intellectual, Academic, Task Commitment, Creativity, Leadership and Artistic or Performing Arts. The Characteristic Checklists (Renzulli, et. al.) were modified in order to reflect the cultural values and language differences by a Revision Committee of primarily Alaskan Natives. They have been previewed in all twenty-six schools within this District and were found to be an effective part of the identification criteria which works as well with the non-Native population as with the Native population. The adopted process for identifying students with outstanding abilities for a Talented and Gifted Program has increased the numbers of students identified for inclusion by fifty (50%).

The document was designed to address cultural/language differences and is meant to be used...not stored on a shelf. It is broad based and flexible enough to be inclusive rather than exclusive and is being used as a working reference and model in this district and in school districts throughout Alaska.

Because this is a growing changing document that will accommodate new aspects of culture as they are manifested, indications are that, with slight modifications, this model can be used for identification for programming which will reflect cultural variance anywhere in the world.

I am very pleased that the plan has been so well received. Anyone interested in finding out more should write or call:

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From Afghanistan to Zimbabwe: Gifted Education in the World Community (Epilogue)

Dr. Bruce Mitchell, Eastern Washington University

Looking at educational development in the world community over the past century, it is obvious that one of the major forces in almost all countries has been the move to a more egalitarian society. As has been previously shown, the expansion of educational opportunity to all social and economic classes has been an integral part of this movement. Capitalist or socialist, communist or democratic, developed or developing, equality of educational opportunity has been an ideal for which all countries have reached.

In such an egalitarian climate and with such a history of social and educational elitism and privilege, it is understandable that most countries of the world have approached gifted/talented education with hesitancy and skepticism. Yet, gifted/talented programs exist world-wide and they continue to develop. Why? We conclude there are five major reasons why this has occurred.

First, countries with a major internal or external threat have turned to gifted/talented education as a way to aid the state in developing the necessary resources for survival. It is no accident that countries such as Israel, South Africa, and Taiwan, nations facing immediate internal or external threat, have some of the most highly developed gifted/talented programs in the world.

Closely aligned with the concern for survival is the interest many countries have in economic and technological development. International political and economic competition have caused many countries to see their welfare tied to the development of their scientific and technological potential. Gifted/talented education is seen as a necessary component of this drive for modernization. The efforts in establishing gifted/talented programs in the Soviet Union, the United States, West Germany, the People's Republic of China and indeed most of the developing countries can be seen as a major outgrowth of this concern.

A third factor contributing to the development of gifted/talented programs is the realization that mass education has in many cases become mediocre education and that many of the brightest students are disinterested and bored in an educational process that teaches to the average. Both laymen and professional educators in many developed countries have come to this conclusion. This realization has caused countries such as the United Kingdom, Australia, Canada and the United States to attempt individualized, enrichment models which provide special attention to the gifted/talented student while still maintaining the egalitarian nature of the educational system. Many countries, as they have expanded their secondary systems to include all, have retained or developed special curricula for students with advanced intellectual, artistic or athletic abilities. West Germany, Japan, the Soviet Union, the People's Republic of China, France, and even the Scandinavian countries have made some special provisions at the secondary level for those who exhibit special gifts or talents.

The fourth factor contributing to the growth and development of gifted/talented education has been the efforts of the private sector. Private schools, youth organizations, and

Continued on page 14

JUST OFF THE PRESS

Rembrandt to Rembrandt: A Case Study of a Memorable Painting Teacher of Artistically Talented Students

Abstract

Enid Zimmerman, Indiana University

The purpose of this study was to describe and analyze characteristics of a memorable teacher of 20 artistically talented 13 to 16 year old students in a two-week painting course at the Indiana University Summer Arts Institute. In this on-site case study, classroom observation, interviews with students and their teacher, time sampling, and analysis of student application forms and two observer journals, were used to collect data. These data were analyzed by content, comparative, and time sampling analyses.

The objective of the teacher, who was the subject of this study, was to have the students in his painting class learn about themselves and their art work. His emphasis on both cognitive and affective skills was evident throughout all phases of his teaching. He wanted his students to understand what it is like to be an artist and to paint adequate self-portraits. His belief that painting is a skill that can be taught was a pervasive factor in all his teaching practices. He was able to recognize when students were bored and frustrated and not performing adequately and he helped them reach their potential.

This painting teacher's success due to his planned teaching strategies, individual attention to all students, positive attitude in public and private contexts, knowledge about art, and ability to make art class challenging and interesting through humor and storytelling contrasts with the popular misconception that if art teachers provide talented students with art materials they will create art.

Students were unanimous in their approval of this painting teacher. Compared to instruction from their regular art teachers, students felt they learned a lot more in this teacher's class. Most students mentioned his stories as informative, serving to introduce history, humor, and facts into the painting class, thus keeping the students alert and reducing tension. The students also felt that when they were bored this teacher was able to help them continue working and complete their art projects.

In this study, the importance of having artistically talented students study art in an accelerated program was evident. It was suggested that as artistically talented students progress at higher levels of achievement in the visual arts, they might be encouraged to attend college level-type classes and study with a mentor so that their knowledge, skills, and values are developed beyond what is normally possible at the junior high and high school levels.

This case study provides one model of successful teaching of artistically talented young adolescents. Information about other case studies of art teachers of talented students, undertaken at different sites with different populations, are requested so that generalizations from this study can be accepted or refuted.

To be published in *Roeper Review* (Winter 1991).

The Scientific Hypothesis Formulation Ability of Gifted Ninth-Grade Students

Abstract

Steven M. Hoover
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St. Cloud State University

John F. Feldhusen
Department of Educational Psychology
Purdue University

An exploratory study was conducted to compare selected cognitive and noncognitive variables' relationships with highly intelligent ninth-grade students' ability to formulate hypotheses about realistic, ill-defined situations. Three hypotheses were tested in this study: Whether boys' and girls' abilities to formulate hypotheses differed; whether significant relationships existed between hypothesis formulation ability and cognitive and noncognitive factors; and the extent to which there was a relationship between the quality and the quantity of students' responses. Results indicated that there were no differences between male and female subjects' abilities to formulate hypotheses. The results of a principal-component analysis indicated that the ability to formulate hypotheses may be independent of intelligence for high-ability students. Finally, a positive relationship was found between the quality and the quantity of subjects' responses.

Journal of Educational Psychology
1990, *82*(4), 838-848

Predictive Significance of Early Giftedness: The Case of Precocious Reading

Abstract

Joseph R. Mills
University of Washington

Nancy Ewald Jackson
The University of Iowa

Results of a longitudinal study of 59 10-12 year olds who had been precocious readers when first tested at 5-6 years of age suggest that extraordinary early achievement in reading predicts above-average, but not necessarily extraordinary, ability in reading and related skill areas during the middle elementary school years, as measured by performance on Level 18 of the California Achievement Test (CAT). Median CAT subtest scores were between 1 and 2 SDs above age-appropriate norms. Verbal Ability at 5-6 years of age predicted individual differences in precocious readers' later reading comprehension accuracy as well or better than initial reading skills did. General Reading Ability, reading Speed, and letter naming speed at 5-6 years were associated with speed to compete the reading comprehension subtest of the CAT. This study illustrates theoretical and methodological issues that must be addressed in other investigations of early development of giftedness.

Journal of Educational Psychology
1990, *82*(3), 410-419

Are Early Readers Gifted?

Nancy Ewald Jackson, Ph.D., Educational Psychology, The University of Iowa

Whenever we counsel parents, identify children for special programs, or try to understand the nature of giftedness in children, we need to deal with the issue of the developmental continuity of giftedness. If a child performs in a way that we would define as gifted at the age of five or six years, what is the likelihood that the child will continue to be a gifted performer in future years? If the child does maintain a pattern of superior achievement, will the accomplishments be predictable in content? The study of children who begin to read at unusually early ages highlights these issues.

Children who are reading fluently before beginning first grade are likely to be perceived by both parents and teachers as intellectually gifted. This precocious mastery of a complex skill certainly merits the label "gifted" and calls for differentiated programming. A six year old who has worked her way independently through *Charlotte's Web* does not need to spend many hours each week being instructed in basic word identification skills. On the other hand, we cannot be certain that precocious readers will continue to demonstrate gifted performances through and beyond their elementary school years.

A comprehensive prospective study of the later accomplishments of precocious readers has not been done. Recent research deals only with the narrower question of the extent to which precocious readers continue to be exceptionally good, i.e., gifted, readers. The answer to this question depends on the standard one sets for defining continued giftedness. The results of several longitudinal studies have confirmed that precocious readers continue to be good readers. By the fifth or sixth grade, the typical precocious reader has continued to achieve in reading at a level well above the national norms, and precocious readers who are cognitively normal virtually never turn into below-average readers. However, many precocious readers do not continue to read at levels that would be considered gifted according to most program guidelines.

Given what we know about the development of reading skill, the finding that an early start in reading does not guarantee continued exceptional performance is plausible. One important factor is the shift in the skills required to be a good reader as word identification becomes more automatic, text comprehension rather than word identification becomes central to the definition of good reading, and books begin to challenge the reader's general vocabulary and world knowledge to a greater extent. Some children may begin reading at an exceptionally early age because they are especially adept at breaking the code of print. These same children are not always especially well endowed with the aspects of verbal intelligence that underlie comprehension of sophisticated texts. A second factor that keeps precocious beginning readers from continuing to stand out as distinctly exceptional readers is simply that, with time and instructional support, many later bloomers catch up.

There may be some ways in which an early start in reading does give a child a lasting advantage. Precocious readers seem to be especially well able to read text rapidly, which facilitates comprehension. Children who achieve well despite coming from the disadvantaged backgrounds often associated with reading failure are likely to have started reading early. However, the nature of giftedness changes as skills and children mature. We need to balance the need to celebrate and support each child's current accomplishments against recognition that new challenges are encountered as development progresses; the same children may not always meet those challenges most successfully.

This report is based primarily on the article referenced below, in which other relevant studies also are cited.

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Soviet Exchange of Information

David M. Fetterman
Stanford University and Sierra Nevada College

Professors Yuri Tarantov and Vladimir Trusov from Leningrad State University were recently guests of David Fetterman for a series of meetings and discussions at Stanford University. George and Louise Spindler also participated in some of the meetings. The focus of the meetings was on gifted and talented education. There is a rekindled interest in the field in the Soviet Union. The Soviet Consulate delivered a copy of David Fetterman's book *Excellence and Equality: A Qualitatively Different Perspective on Gifted and Talented Education* to President Gorbachev during his visit to Stanford. This official interest in the field helped facilitate the Stanford meeting. Information was exchanged about the current economic and political upheaval in the U.S.S.R., including the resurgence of anti-Semitism and ethnic tensions. The role of democratic reforms and a market economy were also discussed. The discussions concluded with a variety of plans for the future, including the development of exchange programs - for students and academic colleagues. Please contact David Fetterman, School of Education, Stanford University, for additional information about the meetings and proposed exchange programs.

Basic Tenets of Our Research

From page 5

We believe that evaluation can contribute to the improvement of identification practices and program effectiveness. By developing improvement oriented and useful techniques and instruments for evaluating identification and program practices, we will provide instruments, strategies, and supporting documentation for the modification of existing practices.

We believe that future research efforts should be responsive to the needs of a diverse group of consumers. To enable us to respond to these needs, a practitioner-responsive advisory network that provides for systematic input about a future research agenda has been developed. This network will encourage the cooperative efforts and participation of state and local education agencies, institutions of higher education, and other public and private agencies and corporations, including business, industry and labor groups.

RESEARCH IN PROGRESS

Longitudinal Study of PACE

Abstract

Sidney M. Moon, John F. Feldhusen, Purdue University

What are the long range effects of participation in an elementary, enrichment, pullout program on gifted students? In order to investigate this question we are beginning an ongoing longitudinal study of gifted students who participated in the Program for Academic and Creative Enrichment (PACE) (Feldhusen & Kolloff, 1979, 1986; Kolloff & Feldhusen, 1981).

In the first phase of our research, twenty-three twelfth graders who had participated in the PACE program for at least three years during elementary school were asked to complete a follow-up questionnaire. Parents of these students completed a parallel form of the questionnaire. In addition, ten of the twenty-three families were selected by criterion-based sampling procedures for in-depth family interviews. Using constant comparative data analysis methods (Glaser & Strauss, 1976; Goetz & LeCompte, 1984), several categories of program benefits (cognitive, affective, and social) and one category of program hindrances (pullout format) were derived inductively from the data. In addition, grounded theory was developed about the role of PACE in developing academic talent and about interactions between the PACE program and the family systems of participating students.

The findings suggest that (1) both students and parents perceived that the PACE pullout program had a moderately positive impact on participating students, (2) the PACE program was moderately effective in achieving program goals, (3) PACE was an effective "early years" talent development experience for most participating students, and (4) PACE created subtle changes in the family systems of most participating students.

The next phase of our research will be directed toward the development of a standardized questionnaire that can be administered to subsequent cohorts of twelfth graders who participated in PACE while in elementary school. We would be interested in sharing information with other investigators who are conducting longitudinal studies of gifted programs in school settings. We would also be interested in hearing from school corporations that have implemented the PACE program and would be interested in participating in our research.

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Early Assessment for Exceptional Potential and Cooperative Alliance in Gifted Education

Abstract

Dr. Beverly D. Shaklee, Kent State University

Two major research projects in gifted child education are underway at Kent State University. Funded through the auspices of the Office of Educational Research Improvement, U.S. Department of Education, the Early Assessment for Exceptional Potential project and Cooperative Alliance in Gifted Education are providing unique opportunities for study to graduate students, university and school-based faculty.

The Early Assessment for Exceptional Potential in Young Minority and/or Economically Disadvantaged Students (Shaklee, 1989) was funded by the Jacob Javits Gifted and Talented Students Education Act. This three year project is using computer-assisted analysis of videotaped samples of representative behaviors as the basis for identification of exceptional intellectual potential. Currently videotaping in five classrooms representing K-3, the videographic data is analyzed using VIDATA and DA*TA (Zuckerman, 1986). These computer programs allow research analysts to determine examples of key identifiers of intellectual potential as evidenced by young minority and/or economically disadvantaged children while engaged in challenging lessons in science and social studies. Additional analysis permit the user to examine the videographic data for frequency, duration, patterns of occurrence and/or cycles of occurrence. Phases II and III of the project are designed to prepare regular primary classroom teachers to: employ observational analysis to identify exceptional potential; modify and individualize instruction appropriately; and, create a cohort group of primary classroom teachers who are able to instruct others in the use of this model.

The Cooperative Alliance in Gifted Education (Shaklee, 1990) was funded through the Educational Partnerships Act. This four year project, designed in collaboration with IBM and Cleveland Public Schools Kennedy-Marshall Cluster, has targeted: the creation of a cooperative alliance among public schools, higher education and the private sector; the expansion of the Early Assessment non-traditional assessment model to grades 4-8; the creation of a computer network between gifted education and regular education classrooms with further links to community agencies; the creation of joint inquiry oriented classroom curriculum which is delivered through the use of technology; and, the thorough examination and evaluation of all components including the impact of collaborative efforts between business, public schools and institutions of higher education. Major research questions being examined for this project include: attitudinal development and change for all stakeholders; reliability and validity of the non-traditional assessment methodology; curriculum development from both student and teacher perspectives; and, technological assessment of student progress.

For further information on either project please contact:
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National Center for Research on Cultural Diversity and Second Language Learning

Eugene Garcia, Barry McLaughlin, University of California, Santa Cruz

The National Center for Research on Cultural Diversity and Second Language Learning has been funded by the Office of Educational Research and Improvement, U.S. Department of Education, effective January 1, 1991. The University of California, Santa Cruz (UCSC), through the university's statewide Linguistic Minority Research Project, received the award to coordinate this Center and will collaborate with the Center for Applied Linguistics (CAL) in Washington, DC and other institutions to conduct the research and provide dissemination activities.

This new national research center is designed to promote the intellectual development, literacy, and thoughtful citizenship of language minority students, and an appreciation of the multicultural and linguistic diversity of the American people. The Center will initiate new projects as well as build on and expand to the national level ongoing research, dissemination, and teaching efforts. The Center's work will involve researchers from a variety of disciplines, include participants from throughout the country, and address the needs of students from a variety of language minority groups in pre-K to grade 12 classrooms.

Several of the research projects deal with the relationship between first and second language learning, and between cultural and linguistic factors in the achievement of literacy. Other projects focus on teaching strategies to assist children from diverse cultural backgrounds in gaining access to content material. Studies that develop alternate models of assessment for these students are also included as are studies that examine various instructional programs for language minority children, and how modifications in the social organization of schools affect their academic performance.

Dissemination will be a key feature for the Center as a whole as well as for each project. The dissemination efforts will be directed to the parents and teachers of language minority students, and to the resource centers, policymakers, advocacy groups, researchers, and professional organizations concerned with their needs.

The new Research Center on Cultural Diversity and Second Language Learning will undertake a dynamic, process-oriented research program that places language learning within a broader social and cultural context. Because it is inherently applied and contextual, this approach should produce lasting practical consequences, assisting parents, practitioners, and policymakers in better educating our nation's culturally diverse children.

For more information about the individual research projects and/or to join the mailing list, please contact the Center at this address:

National Center for Research on Cultural Diversity and Second Language Learning
Dr. Eugene Garcia or Dr. Barry McLaughlin
Kerr Hall
University of California, Santa Cruz, CA 95064
Phone: (408)459-3501
Fax: (408)459-3502

From Afghanistan to Zimbabwe: Gifted Education in the World Community (Epilogue)

From page 10

entrepreneurial endeavors all exist which serve gifted/talented youth. Private schools, as centers of excellence, have had a long history in a number of countries. Also a host of countries such as Canada, the United States, Australia, West Germany, and the Philippines has a number of private organizations which cater to the gifted/talented. Parents and other interested individuals have banded together in organizations which sponsor a variety of enrichment activities for gifted and talented youth.

Finally the focus on egalitarianism and fear of elitism has caused many countries to design gifted/talented programs for disadvantaged youth. Individuals regardless of background are given special attention if they reveal special talent. By providing these programs, governments cannot be accused of perpetuating a social or economic elite. This concern for the disadvantaged gifted has caused countries such as Israel to create special schools for them, the United States to begin organizations dedicated to advancing the talents of this group, and the Soviet Union to search the rural hinterlands in hopes of locating gifted/talented youth. From Australia to Brazil, fledgling programs have been designed specifically for the disadvantaged gifted.

Thus, although many of the problems related to gifted education, such as difficulties with identification, and lack of money and qualified teachers, seem universal, what also seems universal is the interest all nations display in providing special programs of some sort for their gifted/talented young people. Perhaps what is most heartening is that many nations not only see their own survival tied to gifted/talented education but also the survival of the planet. Such enlightened thinking is to be applauded for indeed the welfare of all humanity may in large measure be dependent on the careful nurturing of its best young minds.

A Statewide Model Bridging Research, Theory, and Practice

Sidney M. Moon, Purdue University

The Indiana Association for The Gifted (IAG) is currently sponsoring a new initiative -- the creation of a statewide model for research that would complement existing statewide models for training and service sponsored by the Indiana Department of Education.

In January, 1990, Sidney Moon was appointed the first Chair for Research on the executive board of the Indiana Association for the Gifted. Sidney was asked to form a committee that would encourage research on the nature and nurture of gifted children that would be relevant to the needs of practitioners -- research in the schools, action research, research into the special needs and characteristics of highly gifted students, research that will help parents understand and guide their gifted children.

In the spring of 1990, the IAG Research Committee developed the following vision statement, purpose statement, and goals:

Vision Statement
One of the goals of the Indiana Association for the Gifted is:

> ...to encourage scholarly research and the dissemination of information pertaining to gifted children in school and society.

The Indiana Association for the Gifted (IAG) believes that educational progress for gifted/talented students is contingent upon the effective blending of research, theory, and practice. The IAG Research Committee will encourage excellence in research by and for practitioners and will model statewide coordination of cooperative research efforts.

Purpose Statement
The IAG Research Committee will develop a model for bridging research, theory, and practice in gifted/talented education at the state level.

Goals

1. To encourage research into the nature and nurture of gifted/talented children in the state of Indiana
2. To encourage the dissemination of research information
3. To develop linkages among researchers, educators, counselors, and parents of gifted/talented children
4. To facilitate training of educators, counselors, parents, and students in the interpretation and application of the research literature on the nature and nurture of gifted/talented youth
5. To promote increased funding for research on the gifted and talented in the state of Indiana

Next, the Committee wrote measurable, pragmatic, one-year objectives for 1990-91. These objectives are listed below in order of priority.

Objectives for 1990-91

1. To develop a three year plan for accomplishing the goals of the IAG research committee
2. To sponsor regular columns in IMAGES and IDE's GT newsletter
3. To develop a research strand for the 1991 annual IAG convention
4. To create a linkage between the IAG Research Committee and the IAG Coordinator's Network
5. To develop guidelines for an IAG research award and introduce the new award at the convention
6. To explore the possibility of creating an IAG research foundation
7. To initiate planning for a mini-grant program with the aid of a special projects grant from IDE

Readers interested in developing a similar initiative in other states can call or write Sidney for more information:

Dr. Sidney M. Moon
Purdue University
Department of Child Development and Family Studies
MFT Building
523 Russell Street
West Lafayette, IN 47907
Office phone: (317)494-8448

Information About Tests

Approximately 200 annotated test bibliographies in specific subject areas are available from Educational Testing Service. An extensive library of 16,000 tests and other measurement devices includes descriptions of each test, title, author, publication date, target population, publisher or source, and an annotated description that includes the purpose of each instrument. A brochure describing the categories and procedures for obtaining specific bibliographies may be obtained by writing to:

Test Collection, Educational Testing Service, Princeton, New Jersey 08541 or calling (609) 734-5686. Each categorical bibliography costs $11.00, and a catalog describing all 200 bibliographies can be obtained for no cost.

NRC/GT Research-Based Decision Making Series

Forthcoming Publications

details in future newsletters

Dr. Karen Rogers, The University of St. Thomas, *The Relationship of Grouping Practices to the Education of the Gifted and Talented Learner: Research-Based Decision Making*

Dr. Ann Robinson, The University of Arkansas at Little Rock, *Cooperative Learning and the Academically Talented Student: Research-Based Decision Making*

Dr. Robert D. Hoge, Carleton University, *Research on the Self-Concept of Gifted Students: Implications for Teachers and Students*

Dr. James A. Kulik, University of Michigan, *Effects of Ability Grouping on Bright Students*

Dr. Gilbert Clark and Dr. Enid Zimmerman, Indiana University, *Programming Opportunities and Alternatives for Talented Arts Students*

Dr. Gilbert Clark and Dr. Enid Zimmerman, Indiana University, *Identification of Talented Students in the Arts*

The National Research Center on the Gifted and Talented

NRC/GT
NEWSLETTER

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The University of Connecticut
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NRC
G/T

The National Research Center on the Gifted and Talented
NEWSLETTER

November 1991

THE UNIVERSITY OF CONNECTICUT·THE UNIVERSITY OF GEORGIA·THE UNIVERSITY OF VIRGINIA·YALE UNIVERSITY

NRC/GT: *Update of Year 2 Activities*

E. Jean Gubbins, The University of Connecticut

Year 2 of The National Research Center on the Gifted and Talented has begun with as much energy and speed as our initial "jump start" on the research projects in Year 1. So much happened during the first year of operation that it is hard to believe that several research projects described in our June NRC/GT Newsletter are ending, others are continuing, and seven projects are being initiated. Right now, we are completing or starting fourteen national studies. Applied research of this scope is incredible! Results from Year 1 are being interpreted everyday and most Center hallway conversations revolve around:

"Did you hear about the effects of the treatment in this study?"

"Do you think we should analyze the data another way?"

"How soon will another few pages of the analyses be written?"

"Students involved in the treatment groups for the Curriculum Compacting Study outperformed the control group students on the post achievement tests in science and in math concepts."

"During the observations for the Classroom Practices Study, we found that teachers posed a small number of higher-level questions (application, analysis, synthesis, and evaluation) to elementary school students."

Such comments are heard throughout the Center at The University of Connecticut. Questions are raised, responses are entertained, and then it is back to our respective offices to see if the data should be distilled another way.

We are stretched because of all the research activity. But the excitement surrounding the studies provides the motivation to keep pushing. We can't wait to release the results from the Curriculum Compacting Study and the Classroom Practices Study at The University of Connecticut. We have already shared the results of the Needs Assessment Study in the June newsletter. Now, we are preparing a monograph entitled *Setting an Agenda: Research Priorities for the Gifted and Talented Through the Year 2000.* When the monograph is available, we will let you know.

Our research would not be possible without the funding from the Jacob K. Javits Gifted and Talented Students Education Act from the United States Department of Education, Office of Educational Research and Improvement. The money, however, only makes the researchers available for what they do best. Where the Year 1 research was implemented would have been a major problem without the network of Collaborative School Districts. Our network has grown to 277 districts as of November 1, 1991. Since our March listing of the districts in our Center brochure, we have added the following sites:

Ashford Public Schools
Ashford, CT

Harford County
Schools
Bel Air, MD

Glendive Public Schools
Elementary District #1
Glendive, MT

Contoocook Forks
Central Schools
Peterborough, NH

Chenango Forks
Central Schools
Binghamton, NY

Meigs County Schools
Decatur, TN

Donna Independent
School District
Donna, TX

Williamsburg-James City
Country Schools
Williamsburg, VA

Fort Dodge Catholic Schools
Fort Dodge, IA

Montgomery County Public
Public Schools
Rockville, MD

School District #30
Four Winds Elementary School
Fort Totten, ND

Zuni Public School District #89
Zuni, NM

Hamilton County
Department of Education
Chattanooga, TN

Sevier County Schools
Sevierville, TN

Ector County Independent
School District
Odessa, TX

Wetzel County Schools
New Martinsville, WV

There are only two states that are not represented in the Collaborative School District network: South Dakota and Delaware. Also, we have not been able to recruit schools in the following territories: Puerto Rico, Virgin Islands, American Samoa, and Trust Territory. We will keep trying to get the word out.

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What Happens to Students in Programs for the Gifted?

The Learning Outcomes Project

Marcia A.B. Delcourt, Dewey G. Cornell, Lori C. Bland, Marc D. Goldberg
The National Research Center on the Gifted and Talented, University of Virginia

Why do we place students in programs for the gifted? According to educators, theorists, and other authorities in gifted education, we place high ability students in special programs for several reasons. First, we believe that special programs will help them to learn more and to achieve their potential. Second, we believe that challenging and enriching programs will stimulate creativity and foster positive attitudes toward learning. Finally, we believe that placement in a gifted program will have a beneficial effect on socio-emotional adjustment, enhancing self-concept or ameliorating problems stemming from lack of challenge and absence of contact with peers of similar ability and interests. Broadly speaking, we might say that the reasons for instituting programs for the gifted are Achievement, Attitudes, and Adjustment: the three A's.

Although these reasons make sense, and we may believe them to be true, there has been no large-scale research study focusing on both cognitive and affective learning outcomes of high ability students from different types of programs. The need to investigate learning outcomes leads to another important question arising from discussions of gifted programs-- "Which type of program for the gifted has the greatest impact on students?" The Learning Outcomes Study is one study conducted by The National Research Center on the Gifted and Talented and is a two-year longitudinal study of student achievement, learning attitudes, and general interest in over 1,100 2nd, 3rd, and 4th grade students from 16 districts in 10 states. School districts were selected to represent rural, urban, and suburban communities. They were also selected so that we could examine the effects of programs on students from minority populations and disadvantaged backgrounds. The researchers will investigate the relationship between four general strategies for delivering services to high ability students: within-class programs, pull-out programs, special classes, and special schools. The purpose of the study is also to compare the achievement, attitudes and adjustment of students in these programs to non-gifted students and to students of high ability who do not attend gifted programs.

In the fall of 1990, the researchers completed the first round of data collection by administering a series of educational and attitudinal tests to a sample of elementary school students across the country. These students had either just started their involvement in one of the programs listed above or were students not in programs. Teachers and parents completed questionnaires assessing the children's learning characteristics, interests, and behavioral adjustment. More specifically, to assess student achievement, scores from a group achievement test were collected, as were grades. In addition, attitudes about learning, self-concept and self-motivation are being assessed in all students. Teachers completed surveys about each student's creativity, learning, motivation and adjustment while parents indicated the types and frequency of student activities and completed a survey of student adjustment. All tests and surveys were administered in the spring of 1991 and will be administered during 1991-92 to assess what changes have taken place.

What happens when elementary school students are first placed in gifted programs? Does achievement or do attitudes change over time? How does placement influence self-concept or behavioral adjustment? How are students from minority groups affected by different types of programs? These are some of the key questions we are addressing. The researchers are also collecting information on each program's identification criteria, curriculum, teaching methods, and goals, as well as the background and training of program teachers. The long-term effects of participating in different types of gifted programs and program characteristics associated with positive learning outcomes will be examined.

NRC/GT: Update of Year 2 Activities

E. Jean Gubbins, The University of Connecticut

Continued from page 1

Our Content Area Consultant Bank is expanding. We are in the process of preparing a directory which contains listings of 134 consultants interested in providing workshops for teachers or parents; consulting on policy issues, program development, evaluation, or clinical evaluation and intervention; or conducting projects with the NRC/GT. We would like to welcome the following Consultant Bank Members as of November 1, 1991:

Dr. Susan Demirsky Allan
Dearborn Public Schools
Dearborn, MI

Dr. Donald L. Beggs
Southern Illinois University
Carbondale, IL

Dr. Gilbert A. Clark
Indiana University
Bloomington, IN

Dr. Nicholas Colangelo
Connie Belin National
Center/Gifted Education
Iowa City, IA

Dr. Dorothy Armstrong
Grand Valley State University
Grand Rapids, MI

Dr. Jeanne M. Burns
Southeastern Louisiana
University
Hammond, LA

Dr. Robert E. Clasen
University of
Wisconsin-Madison
Madison, WI

Dr. Nancy R. Cook
RMC Research Corporation
Hampton, NH

Ms. Sally M. Dobyns
Mary Baldwin College
Staunton, VA

Dr. Shelagh A. Gallagher
Illinois Mathematics &
Science Academy
Aurora, IL

Dr. Leslie Garrison
San Diego State University
Calexico, CA

Dr. Barry Grant
Center for Talent & Development
Evanston, IL

Dr. M. Gail Hickey
Indiana-Purdue University
Fort Wayne, IN

Dr. Marcia B. Imbeau
University of Arkansas
Fayetteville, AR

Dr. Elyse S. Fleming
Cleveland State University
Cleveland, OH

Dr. Leonore Ganschow
Miami University
Oxford, OH 45056

Dr. David Goldstein
Duke University
Durham, NC

Dr. Howard Gruber
Columbia University
New York, NY

Dr. Steven Hoover
Saint Cloud State University
Saint Cloud, MN

Dr. David F. Lohman
The University of Iowa
Iowa City, IA

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What is the Research Agenda of the Center for Year 2?

The Research Center is initiating seven new studies based on the priorities that emerged from the National Research Needs Assessment Process. In addition to those described below, three Year 1 studies are continuing: *Investigations into Instruments and Designs Used in the Identification of Gifted Students and the Evaluation of Gifted Programs, Evaluation of the Effects of Programming Arrangements on Student Learning Outcomes* (The University of Virginia), and *A Theory-Based Approach to Identification, Teaching, and Evaluation of the Gifted* (Yale University).

A Study of Successful Classroom Practices

The University of Connecticut *Principal Investigators: Dr. Karen L. Westberg and Dr. Francis Archambault, Jr.*
Implementation: 1991-92

This study will provide a description of the conditions necessary to meet the needs of the gifted and talented and the strategies used to modify instructional approaches and regular curriculum materials in the classroom. The research questions that will guide this study include: (1) What factors contribute to classroom teachers' effective use of differentiated teaching strategies? (2) What environmental factors within the classroom and school contribute to effective use of differentiated teaching strategies? (3) How does the presence of a gifted education specialist affect the instructional strategies and materials used in the regular classroom? (4) How does the presence of a resource room or pull-out program affect the students' need for instructional and curricular differentiation in the regular classroom?

This research will be an ethnographic study of a few classrooms identified as exemplary in their implementation of curriculum modification and curriculum differentiation. Purposive sampling will be used to identify classrooms that are outstanding examples of this approach while also providing maximum variation in types of districts, such as a predominately white middle-class area, a multi-ethnic area, and, if the data permit, an economically disadvantaged, area. Participant observation will be the major data-gathering technique for this study. Additionally, in-depth, open-ended, tape recorded interviews will be conducted with the classroom teachers observed, the principals of the schools, the curriculum coordinators, the teachers of the gifted and talented students, and possibly other interested parties, such as parents.

Longitudinal Study of Successful Practices

The University of Connecticut *Principal Investigator: Dr. Francis X. Archambault, Jr.*
Implementation: 1991-95

This study will formulate plans for a longitudinal assessment of the impact of "most successful practices." These practices will be gleaned from other studies conducted by the NRC/GT. We envision that the study will be implemented in Years 3 through 5 (and beyond if funding can be secured) and that it will employ a true experimental design (i.e., students or classes will be randomly assigned to treatment conditions). One or more Collaborative School Districts and schools within them will be selected to ensure ethnic and economic diversity. The study will be conducted in both regular classroom and resource room settings.

During the planning year the data from the Classroom Practices Study, the Compacting Study, the Successful Practices Study, the Cooperative Learning Study, and the Learning Outcomes Study will be reviewed to determine the most successful practices and how they can be integrated into regular classroom and resource room environments. Other studies funded by OERI will also be reviewed, literature reviews will be conducted, and, where necessary, position papers will be written by University of Connecticut site staff and distinguished researchers at other institutions not directly involved in the NRC/GT. Instructional materials will be selected or produced, instruments will be adopted, adapted or developed, and procedures for implementing the experimental design will be formalized.

Case Studies of Gifted Students with Learning Disabilities Who Have Achieved

The University of Connecticut *Principal Investigators: Dr. Sally M. Reis and Dr. Joan McGuire*
Implementation: 1991-92

This study will investigate the factors that enable some gifted students with learning disabilities to succeed in an academic setting. The perceptions of the persons investigated in this study may provide information that helps to identify this population and suggest specific educational interventions designed to meet the unique needs of this group. Specifically, we will investigate the following areas with college students or recent college graduates who were identified as having a learning disability:

The self-perceived strengths and weaknesses of gifted students with learning disabilities;
The specific educational intervention and assistance necessary to succeed in an academic environment;
The types of counseling strategies necessary to help gifted students with learning disabilities realize their potential;
The collective view of this population regarding their treatment by others and others' perception of them (parents, teachers, peers, guidance counselors);
Whether modifications were made in the instructional practices and educational programs designed for this population;
The positive and/or negative effects of labeling (either gifted and/or learning disabled) on this population; and,
The specific nature of the learning disability of the individuals in this study.

What is the Research Agenda of the Center for Year 2?

Cooperative Learning and the Gifted

The University of Connecticut *Principal Investigators: Dr. David A. Kenny and Bryan W. Hallmark*
Implementation: 1991-92

The study is designed to assess the effects of cooperative learning methods on gifted students, and their non-gifted peers. Outcome measures will include achievement, attitudes towards self and school, and students' perceptions of others' ability, support, appreciation, leadership, likability and acceptance. Both boys and girls representing various ethnic groups will be included. The researchers will work with intact classes selected from a single grade level, grade 4. Students will be assigned to four-person learning groups of Gifted (G) and Non-Gifted (N) students. Three group compositions will be analyzed: a gifted homogeneous group (GGGG), a non-gifted homogeneous group (NNNN), and a heterogeneous group (GNNN). All groups will work on two types of cooperative learning tasks: a group oriented math task and a more traditional cooperative learning task in science. For each of the tasks, students will participate in multiple one-hour learning sessions in the regular classroom environment.

Three measurement periods will be used. The first will occur immediately after group assignment and prior to any group interaction; the second will be after the first series of learning sessions; and the third will occur after the second series of learning sessions. During measurement period one, students will complete a peer rating questionnaire, an attitude toward school questionnaire, an attitude toward session-specific subject questionnaire, and a self-efficacy measure. Measurement periods two and three will repeat the measures taken during period one, but will also involve the evaluation of task-specific achievement. The following questions will be addressed: Do gifted students learn more than children who are non-gifted? Do gifted children assist the learning of the other children in the group? Does achievement differ in homogeneous versus heterogeneous grouping? These effects can be investigated separately for different ethnic groups, as well as for males and females.

A Research-Based Assessment Plan (RAP) for Assessing Giftedness in Economically Disadvantaged Students

The University of Georgia *Principal Investigator: Dr. Mary M. Frasier*
Implementation: 1991-92

The major objective of this study will be to determine the effectiveness of a research-based assessment plan (RAP) in increasing the identification of gifted students from economically disadvantaged populations. To accomplish this objective, two models will be developed and piloted: (a) the RAP and (b) a Staff Development Model (SDM). A secondary objective will be to conduct follow-ups on selected case study students from the first year study. Data from these follow-up case studies will be used to enrich the development of the RAP and the SDM.

Content for the RAP and the SDM will be based on the identification paradigm developed during the first year of The University of Georgia research study to describe giftedness within and across a variety of cultural groups. Additional input on content and procedure will be provided by a panel of expert members and collaborative researchers who participated in the Georgia Study; National Research Center Needs Assessment Survey results; and State Research and National Research Center Advisory Council members. Relevant literature on assessment and staff development will also be used to formulate the models.

Extension of the Learning Outcomes Project

The University of Virginia *Principal Investigator: Dr. Marcia A. B. Delcourt*
Implementation: 1991-92

Learning outcomes are broadly defined to include both academic and affective effects of participating in a program for the gifted and talented. For the purposes of this study, academic effects include: performance on standard achievement tests, grades, teacher ratings of student learning behaviors, and student attitudes toward learning. Affective outcomes include: student self-concept and self-motivation, and both parent and teacher ratings of behavioral adjustment. Data will be collected at four stages. Approximately 1,100 2nd, 3rd, and 4th grade students will be assessed upon their entrance into one of the four types of programs, at the end of their first year in the program, and at the beginning and end of their second year.

Researchers among the participating universities in the NRC/GT agree that a need exists to add a qualitative dimension to the study of the four types of programming arrangements [(1) within classroom programs; (2) pull-out classroom programs; (3) separate class programs; and (4) special school programs] in the Learning Outcomes Project. This need has evolved during the first year implementation. More specifically, what characterizes a program that is identified as an "exemplary" model of a given program type? What are the influences of such exemplary programs on student achievement and effort? What distinguishes an exemplary representative model in terms of its ability to serve diverse populations of students? A qualitative study to address these questions has been proposed in which one district from each of the four types of programming arrangements will be selected for a thorough investigation. Observing classroom practices, and receiving responses from state-level administrators, selected classroom teachers, parents and students about characteristics and overall effects of the program will serve as the sources of data.

Motivation and Underachievement in Urban and Suburban Gifted Preadolescents

Yale University *Principal Investigator: Dr. Pamela R. Clinkenbeard*
Implementation: 1991-95

What creates or inhibits a "gifted" level of performance, both in those who have been identified as gifted and in those who have not? This project will address two important factors in the gap between potential and performance: motivation and disadvantage. This project will describe in qualitative fashion the motivational patterns found in both suburban and economically disadvantaged urban classrooms of gifted preadolescents. Research on achievement motivation has been moving toward discovering and developing more methods for fostering learning goals, or task commitment: that is, a love of learning for its own sake and a desire to persevere on tasks of interest. The goal is equally important for those who have been overlooked in the identification process.

This project will directly address several of the important topics for research on the gifted, as selected by the National Research Center Advisory Council, including motivation; effectiveness of differentiated program for economically disadvantaged, underachieving and other special populations; self-efficacy; and assumptions/stereotypes of underachievement. It would indirectly address many other items, since motivation and underachievement were concerns that arose within the discussions. Expected knowledge includes some answers to these questions: Do suburban classrooms for gifted preadolescents reveal different motivational patterns from those in urban classrooms? Are motivational patterns of students identified as gifted different in kind and/or degree from motivational patterns of other students? Does the experience of being labeled "gifted" cause a shift in motivation-related behavior?

NRC/GT: Update of Year 2 Activities

E. Jean Gubbins, The University of Connecticut

Continued from page 2

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Birmingham, AL 35294

Dr. Isaiah Sessoms
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Clarion, PA

Dr. Anne J. Udall
Tucson, AZ

Dr. Marian Matthews
Eastern New Mexico University
Portales, NM

Dr. Kevin R. Rathunde
University of Utah
Salt Lake City, UT

Dr. Robert N. Sawyer
Northwestern State University
Natchitoches, LA

Dr. Carolyn Yewchuk
University of Alberta
Edmonton, Alberta, Canada

Several Content Area Consultant Bank members have been commissioned to write papers in our Research-Based Decision Making Series. The abstract of Dr. Karen Rogers' paper entitled, *The Relationship of Grouping Practices to the Education of the Gifted and Talented Learner* is featured in this newsletter. A complimentary copy of the Executive Summary for this paper and future papers will be mailed to Collaborative School Districts, Consultant Bank members, State Departments of Education, National Research Center Advisory Council members, Regional Educational Laboratories, Educational Research and Development Centers, Parent Organizations and Javits Grants Recipients. A copy of the full-length paper is available on a cost-recovery basis (see the newsletter message).

In addition to the papers listed in our last newsletter on Ability Grouping (Dr. James Kulik), Self-Concept (Dr. Robert Hoge and Dr. Joseph S. Renzulli), Identification of Art Students and Programming for Art Students (Dr. Gilbert Clark and Dr. Enid Zimmerman), we have commissioned papers on the following topics:

- Creativity
  Dr. Mark Runco
  California State University
- Mathematics
  Dr. William H. Hawkins
  Mathematical Association of America
- Reading
  Dr. Nancy Jackson
  University of Iowa
- Science
  Dr. Paul Brandwein
  Science Consultant
  New York

We are excited about this Research-Based Decision Making Series. The series extends the range of topics of interest to practitioners involved in the NRC/GT. More topics will be announced in the future.

The United States Department of Education, Office of Educational Research and Improvement, our funding agency, recently requested information on the relationship of The National Research Center on the Gifted and Talented mission to The National Education Goals, America 2000, and Core Subject Areas. The major elements of each research study were analyzed and recorded in a matrix. Two examples of studies and their major elements follow:

Continued on page 14

The National Research Center on the Gifted and Talented

	National Education Goals						America 2000				Core Subjects				
	Goal 1 Ready To Learn	Goal 2 School Completion	Goal 3 Achievement/ Citizenship/ Prob. Solving	Goal 4 Science Math	Goal 5 Literacy/ Learning	Goal 6 Safe/ Disciplined/ Drug-free	Track 1 Improve Schools	Track 2 New Schools	Track 3 Post-School Learning	Track 4 Communities Families	Mathematics	Science	English	History	Geography
1 National Needs Assessment	·	·	·	·	·	·	X	X	·	X	·	·	·	·	·
2 Classroom Practices	·	·	X	X	X	·	X	X	·	·	X	X	X	X	·
3 Curriculum Compacting	·	X	X	X	X	·	X	X	·	·	X	X	X	X	·
4 Investigation of Giftedness	·	·	·	·	·	·	X	X	·	X	·	·	·	·	·
5 Learning Outcomes	·	X	X	X	X	·	X	X	·	X	X	X	X	X	·
6 Investigations into Instruments and Designs	·	X	X	·	·	·	X	X	·	·	X	X	X	X	·
7 Theory-Based Approach - Identification, Teaching, Evaluation	·	·	X	·	X	·	X	X	·	·	·	·	·	·	·
8 Successful Classroom Practices	·	·	X	·	·	·	X	X	·	·	X	X	X	X	·
9 Longitudinal Study of Successful Practices	·	·	·	·	·	·	X	X	·	·	·	·	·	·	·
10 Gifted Students with Learning Disabilities	·	X	·	·	X	·	X	X	·	X	·	·	·	·	·
11 Cooperative Learning and the Gifted	·	X	X	X	X	·	X	X	·	·	X	X	X	X	·
12 Research-Based Assessment Identification of Gifted Students	·	·	·	·	·	·	X	X	·	X	·	·	·	·	·
13 Qualitative Extension of Learning Outcomes Study	·	·	X	·	·	·	X	X	·	X	·	·	·	·	·
14 Motivation and Underachievement in Gifted Preadolescents	·	X	X	·	·	·	X	X	·	·	·	·	·	·	·

The Collaborative School Districts: What did it mean for us?

Jann Lepplen, Stuart Omdal and Del Siegle have served as Collaborative School District contacts during the past year. They recently met to discuss how the impact of their involvement with The National Research Center's Needs Assessment Survey and Curriculum Compacting Study affected their districts.

Collaborative School District contacts provide the link between the Center and the research sites. Over 270 districts from 48 states and 1 territory are currently enrolled. Lepplen worked with the Lockwood School educators in Billings, Montana. Omdal participated with the staff of Minter Bridge Elementary School in Hillsboro, Oregon and Siegle was involved with the teachers at Lincoln Elementary School in Glendive, Montana. A transcript of their conversation follows:

Jann: One of the major benefits of being a Collaborative School District is that it keeps us up to date and knowledgeable about current research in the field. We were contacted and had the opportunity to participate in the initial Needs Assessment Survey in which we indicated our preference of research topics chosen for future study.

Stuart: The survey provided a link between the university "ivory tower" and the people in the trenches. Sometimes people would ask, "Why should our district take the time? What is in it for us?" Sometimes all we see are the forms to fill out and we fail to see ourselves as being a part of the bigger picture. The educational technology and curriculum in use today are all a result of somebody's past research. Participation in current research is important.

Jann: Being a Collaborative School District also gives us an opportunity to have a working relationship with the university. We have a direct link to what is happening and there is a place to go to have our questions answered and concerns voiced.

Del: Our district was part of the Curriculum Compacting Study which gave us the initiative to try something different. Compacting was something the district had been wanting to implement and the study provided us with the impetus we needed. The staff voted overwhelmingly to participate in the research.

Stuart: Yes, being involved as a research site can open doors of opportunity.

Del: The teachers felt their participation in the Curriculum Compacting Study was important and they were making a contribution toward effective teacher training in curriculum compacting. They were anxious to hear how other sites were progressing and looked forward to hearing the results of the study. They wanted feedback.

Jann: Feedback was important on the surveys, as well. The teachers completing the survey enjoyed hearing from the Center and learning the results.

Stuart: Teachers realized that their concerns were significant. They discovered that what they viewed as important issues were also the concerns of other teachers, as well as researchers.

Jann: By inviting a variety of personnel in the district to participate in the Needs Assessment Survey, I became aware of staff concerns which could be addressed through inservice. The National Research Center Needs Assessment helped me gather information about the concerns of the staff.

Del: The students were also excited about being part of a nationwide effort. When I explained to them what compacting involved, one looked at me rather puzzled and said, "Well, it only makes sense not to do the work I already know how to do." She wondered why this hadn't happened earlier in her life.

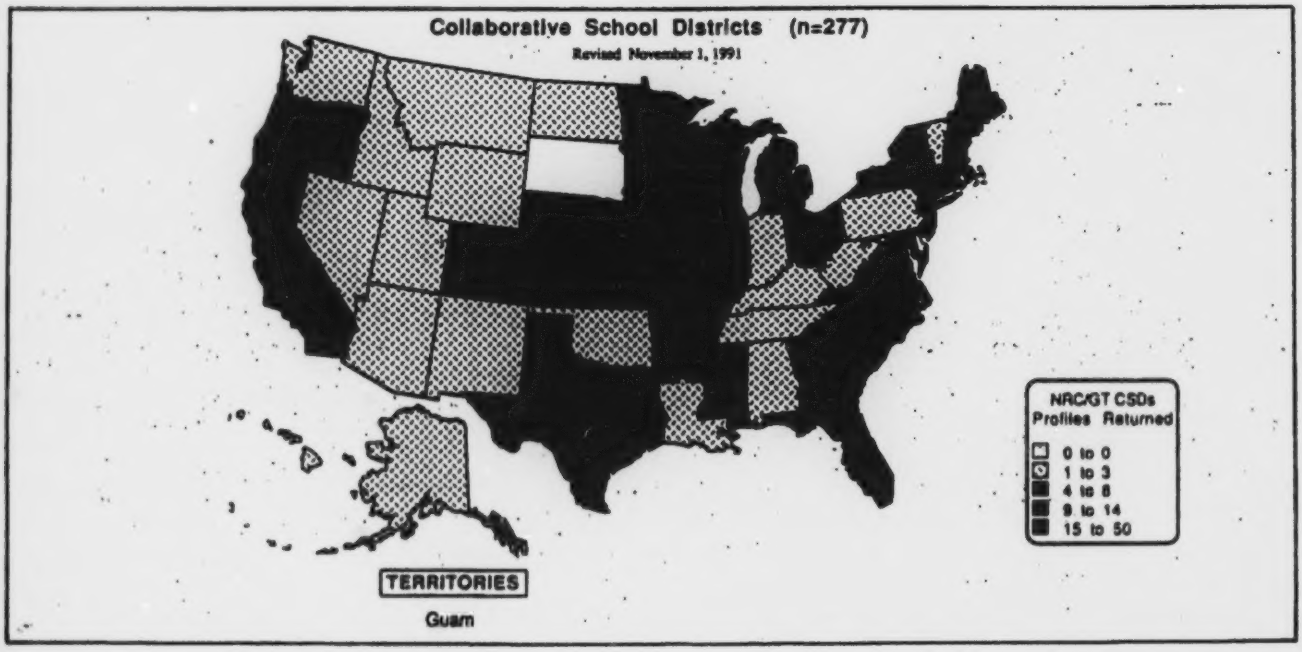
Jann: It is important to feel that what we do is important to someone else and that the work we are doing in the public schools is being recognized.

Stuart: That's right, we are hoping that our efforts will have an impact in schools throughout the country.

Del: Our classroom teachers viewed the study beyond the field of gifted education. They considered it a contribution to quality education as a whole.

Jann: When those official letters arrive from the Center, the importance of gifted education is recognized. I recall when our superintendent came down to my office and said, "I think this is something important and we need to be part of it." This helped give the gifted education movement a sense of validity.

We would like to have every state and territory involved with some aspect of our work over the next four years. If you know of a school district that might be interested in joining our growing family, contact the Center.


Collaborative School Districts (n=277)

Revised November 1, 1991

The Relationship of Grouping Practices to the Education of the Gifted and Talented Learner: Research-Based Decision Making

Abstract

Karen B. Rogers, University of St. Thomas, St. Paul, Minnesota

In this paper 13 research syntheses were described, analyzed, and evaluated to determine the academic, social, and psychological effects of a variety of grouping practices upon learners who are gifted and talented. Three general forms of grouping practices were synthesized: (1) ability grouping for enrichment; (2) mixed-ability cooperative grouping for regular instruction; and (3) grouping for acceleration. Across the five meta-analyses, two best-evidence syntheses, and one ethnographic/survey research synthesis on ability grouping, it was found that: (a) there are varying academic outcomes for the several forms of ability grouping that have been studied (i.e., tracking, regrouping for specific instruction, cross-grade grouping, enrichment pull-out, within-class grouping, and cluster grouping); (b) the academic outcomes of these forms of ability grouping vary substantially from the effects reported for average and low ability learners; (c) full-time ability grouping (tracking) produces substantial academic gains; (d) pullout enrichment grouping options produce substantial academic gains in general achievement, critical thinking, and creativity; (e) within-class grouping and regrouping for specific instruction options produce substantial academic gains provided the instruction is differentiated; (f) cross-grade grouping produces substantial academic gains; (g) cluster grouping produces substantial academic effects; and (h) there is little impact on self-esteem and a moderate gain in attitude toward subject in full-time ability grouping options.

For the two meta-analyses and one best-evidence synthesis on mixed-ability cooperative learning there was no research reported below the college level to support academic advantages of either mixed-ability or like-ability forms. Although no research had been directed specifically to these outcomes for gifted and talented students, there was some evidence to suggest sizeable affective outcomes. Across one meta-analysis and one best-evidence synthesis on acceleration-based grouping options, several forms of acceleration produced substantial academic effects: Nongraded Classrooms, Curriculum Compression (Compacting), Grade Telescoping, Subject Acceleration, and Early Admission to College. Moderate academic gains were found for Advanced Placement. Either small or trivial effects were found for these six options for socialization and psychological adjustment.

It was concluded that the research showed strong, consistent support for the academic effects of most forms of ability grouping for enrichment and acceleration, but the research is scant and weak concerning the socialization and psychological adjustment effects of these practices. Claims for the academic superiority of mixed-ability grouping or for whole group instructional practices were not substantiated for gifted and talented learners. A series of guidelines for practice, based upon the research synthesized was included.

The work reported herein was supported under the Javits Act Program (Grant No. R206R00001) as administered by the Office of Educational Research and Improvement, U.S. Department of Education. The findings do not reflect the position of the Office of Educational Research and Improvement or the U.S. Department of Education.

What Does the National Controversy on Ability Grouping Mean for the Gifted?

Several anti-grouping advocates have placed services for the gifted on their "hit list" for program elimination. Many of their claims about research findings are exaggerated or untrue. Unfortunately, policy makers are already acting on these inaccurate portrayals of research. We need to share with advocates and policy makers answers to questions such as:

- What does the research really say about ability grouping?
- How does ability grouping affect self-esteem?
- Do gifted students benefit from cooperative learning?

Find the answers to these and other critical questions about ability grouping research by writing for a copy of:

The Relationship of Grouping Practices to the Education of the Gifted and Talented Learner
By Dr. Karen B. Rogers
The University of St. Thomas

Order No. 9101—
Executive Summary of Dr. Rogers' Paper (7 pgs.) ... $2.00

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Profiles of Javits Gifted and Talented Education Programs

Project STREAM (Support, Training, and Resources for Educating Able Minorities)

Project STREAM is a collaborative effort between three Wisconsin universities and six school districts for the purpose of improving identification and programming options for gifted and talented students with major focus on students from minority populations. STREAM has five principal goals: (1) To develop multiple ways to identify the diverse talents and abilities of minority students; (2) To promote a conceptualization of giftedness which embraces the idea of multiple intelligences; (3) To increase the representation of minorities in gifted programs to the level proportionate to their representation in the population; (4) To help provide systematic and continuous programming for students in the program during middle and senior high school; (5) To increase the likelihood that students will stay in school through high school and subsequently elect to start and complete a baccalaureate degree.

STREAM is based on seven basic assumptions:

1. Talents and abilities are distributed equally without regard for gender, race or nationality.
2. Multiple talents and intelligences exist.
3. Early identification of talents and abilities is necessary.
4. Systematic and continuous attention to students is required.
5. Psychological components are as important as the academic.
6. Universities need to link with minority students, their teachers and their parents when students are at an early age.
7. Parents need to be involved in their children's education.

The Process. Each spring a number of sixth grade students in Beloit, Delavan-Darien, Kenosha, Waukesha, Racine, and Milwaukee are identified for the program. Identification is done in several ways: Traditional ways of identifying students may be used (grades, achievement scores, etc.), but focus is on developing nontraditional means of finding abilities such as creativity, problem solving, leadership, and the arts. Observational analyses are of special interest. Once in the program, students stay throughout middle and senior high school. Each year a new group is added, thus enlarging the STREAM. As talents and abilities are identified, students are integrated into existing gifted and talented school programs which meet their needs.

Student Programming. During the school year, students come to the UW-Whitewater and UW-Parkside campus at least once a semester. Emphasis during the day is on skills and psychosocial factors. One visit includes a cultural event. During the school year special programs are offered for students in their school districts. When necessary, academic assistance is provided. Mentoring is also made available. In summer, students come on campus for a week's residency. They work on skills such as writing, speech, math and on psychosocial dimensions such as self-esteem and confidence. Special talents are fortified through offerings in dance, art and theater. Students work with both minority and non-minority staff, including university faculty, live in the dorm, and learn to use university resources.

Staff Development. STREAM also sponsors staff development opportunities and provides special assistance to teachers of STREAM and other minority students. A practicum-oriented class is offered in conjunction with the Summer Institute and a class is given in Milwaukee once a year. Curriculum for meeting the needs of gifted students in the classroom is being developed, and material resources are made available to both students and staff.

Parent Programs. Programs for parents of STREAM students are also offered. Emphasis is on meeting the needs of parents with the belief that a major way to assist students is through the parents.

For more information on UW-Whitewater STREAM, please contact Dr. Donna Rae Clasen at 6038 Winther Hall, UW-Whitewater, Whitewater, WI 53190 (414-472-1960 or 472-5379) or Eve Johnson (414-475-8459). At UW-Parkside contact Dr. Barbara Shade at Box 2000, UW-Parkside, Kenosha, WI 53141 (414-553-2376).

The Gifted Education Policy Studies Program

James J. Gallagher
University of North Carolina at Chapel Hill

The Gifted Education Policy Studies Program, under the direction of James J. Gallagher at the Frank Porter Graham Child Development Center, University of North Carolina at Chapel Hill, was established to analyze and seek solutions to two major issues which interfere with providing full educational services to gifted students. These issues are: (1) state and local policies regarding eligibility for gifted programs which tend to reduce the participation of some gifted students (minority, disabled, and underachievers); and (2) educational reform efforts (cooperative learning and the middle school movement) which may reduce services designed for gifted learners.

In examining the first issue, underserved gifted students, an analysis of existing state policies is being conducted to identify specific policy barriers to identification, as well as states with model policies. A case study of three states which seem to have policies that enable broader identification of gifted students to take place will be conducted to determine how this goal was accomplished. As a result of this work, legislative designs will be developed as models for states wishing to address this issue.

The second study, an examination of the impact of school reform on gifted students, will investigate ways which reform efforts and gifted programs can work together successfully to enhance services to gifted students. A survey designed to identify the current obstacles to this cooperation, and suggested strategies to combine efforts will be conducted. Further investigation will involve the identification of sites where school reform efforts and gifted programs have been successfully interfaced to enhance services for gifted students. From this investigation a paradigm for successful collaboration between school reform initiatives and gifted programs will be developed.

Any one with information regarding cooperative learning or middle school programs which have been designed with particular attention to the needs of gifted students, please contact us:

James J. Gallagher, Director
Mary Ruth Coleman, Associate Director
Gifted Education Policy Studies Program
CB 8040, NCNB Plaza, Suite 301
Chapel Hill, NC 27599-8040

Javits 7+ Gifted Program

Joyce Rubin, Joel Rubenfeld
Community School District 18, Brooklyn, New York

Community School District 18 in Brooklyn, New York, was funded by the United States Department of Education under the Jacob K. Javits Gifted and Talented Students Education Act to develop a demonstration project that would explore ways to identify and provide appropriately differentiated curriculum for students who are usually not identified as gifted through the use of traditional assessment methods, and are often overlooked in the classroom. This includes the economically disadvantaged, students with limited English proficiency, and individuals with handicapping conditions. The theoretical foundation for District 18's project, the Javits 7+ Program, is Howard Gardner's Theory of Multiple Intelligences. District 18 created an early childhood program designed to discover and develop multiple intelligences identified by Gardner's research. Under the leadership of Joyce Rubin, Director of Gifted Programs, and Joel Rubenfeld, Project Coordinator, a team of teachers and staff developed a series of intelligence-fair performance based assessments.

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Profiles of Javits Gifted and Talented Education Programs

Identifying Underrepresented Disadvantaged Gifted and Talented Children: A Multifaceted Approach

Dennis P. Saccuzzo, San Diego State University, University of California, San Diego

A series of studies and statistical analyses are being conducted to develop the fairest possible method for selection of gifted and talented education (G.A.T.E.) students. These analyses are expected to lead to the development of a selection model that will increase the numbers of underrepresented disadvantaged gifted children in proportion to the ethnic populations enrolled in the San Diego City School District, grades 3-12. Anonymous data consisting of information on gender, ethnic background, various ability and achievement test scores and disposition concerning giftedness are being provided by the seven G.A.T.E. psychologists of the San Diego Unified School District. Approximately 5,000 children from a variety of ethnic backgrounds including African-American, Caucasian, Asian, Filipino, and Hispanic will be tested each year for three years. A major focus of the study will be to test the efficacy of the Raven Progressive Matrices Test and Locus of Control Scales in providing unbiased data pertaining to giftedness. A selection model tailored to each ethnic group will be determined utilizing both breadth and depth models. At the end of Year One, a report detailing the fairest and most equitable model will be presented. Year Two will consist of the implementation of the model. In Year Three, the model by which the giftedness in underrepresented disadvantaged children is identified and nurtured will be subject to cross-validation.

In addition, selected gifted and non-gifted African-American, Caucasian, Filipino, and Hispanic children will be given the opportunity to respond to a set of microcomputerized information-processing tasks. These tasks evaluate abilities that cannot be measured by traditional paper and pencil or standard IQ tests.

Archival data from approximately 15,000 gifted students of various ethnic backgrounds will be evaluated. The primary focus of the archival data analyses will be to determine the unique cognitive strengths and weaknesses of children of various ethnic backgrounds.

Javits 7+ Gifted Program

Joyce Rubin, Joel Rubenfeld, Community School District 18, Brooklyn, New York

Continued from page 9

The project director, coordinator and curriculum specialists conduct workshops where the teachers are presented with a variety of strategies, such as using learning centers and contracts to individualize instruction. Supervisors, teachers and visual and performing artists work collaboratively to create an appropriately differentiated curriculum which is presented through conceptual themes. These interdisciplinary units of instruction provide opportunities for students to develop their multiple intelligences, as well as their critical and creative thinking skills. The Javits 7+ teachers create a supportive learning environment, which values all intelligences equally, and enables students to recognize and appreciate their own uniqueness and that of their peers. A team of artists from Young Audiences/New York works cooperatively with program teachers to develop interdisciplinary activities. Because parents are partners in the education of their children, workshops are provided enabling parents to develop strategies which nurture their children's multiple intelligences at home.

There are four pilot classes this year: a first grade at P135; a first grade at P268; a first grade class and a first/second grade bilingual bridge class at P219. Next year the funding will serve ten classes: first and second grade at P135; first and second grade at P268; two first grade classes, a second and a third grade class at P219; and two special education classes in early childhood for youngsters with handicapping conditions (MIS IV) at P279. Additional classes will open at other schools (first grade at P233, kindergarten and first grade at P279), although they are not included in the funding for this project.

Contricipation: The Creative Process for Everyone

Commentary

Morris I. Stein, New York University

CONTRICIPATION is a term I coined to call attention to the fact that everyone is or can be involved in the creative process. A person either *contributes* to the process or *appreciates* the process. Contributors *need* appreciators and appreciators *need* contributors. All too often attention is focused solely on the problems of contributors--the creative person has difficulty getting financial support; the creative person had difficulty being recognized, etc. But appreciators have problems also. Can you imagine what the world would be like without creativity? Imagine having insomnia some night and wanting to read a good book but no one had written it! Imagine wanting to listen to a symphony, but no one had composed it! Imagine needing medicine for a loved one who is ill but no one had discovered/developed it! Appreciators also would have problems in a world without creativity.

For the past several years I have been involved in studying creative adults. A group of particular interest in my study consists of those who have been exposed to both cognitive complexity and emotional security. This would involve doing research on a larger population where one could study parent-child relationships. I don't have access to a gifted population at present. Nor do I have research funds. But, if anyone is interested and where funds would not be a barrier please write to me.

Also I am bringing my 1986 book on *Gifted, Talented and Creative Young People* up-to-date. I would appreciate it very much if anyone who has published since 1986 in the gifted area would send me copies of their papers.

All communication should be sent to Prof. Morris I. Stein, Dept. of Psychology, 6 Washington Place, NY, NY 10003. Or, call: (212)-998-7825 and if no response, call (212) 475-2428.

Young Gifted Children

Carol Story, Johnson State College

Giftedness - There are as many definitions for giftedness as there are researchers in the field. The two more popular ones in current usage are the Federal definition and the Renzulli definition. The Federal Office of Education issued the Marland Report in 1972 which defines the gifted as those youngsters possessing intellectual ability, scholastic aptitude, creativity, leadership, talent in the visual and performing arts, and/or psychomotor ability. The Renzulli definition (1978) describes gifted behavior as the interaction of above average ability, creativity, and task commitment as brought to bear upon a special area of interest. Variations of these definitions occur from state to state and ultimately they suggest the need for special programming for the top 2 to 20% of the population.

Characteristics - Gifted children make themselves known by their observable behaviors at an early age. These behaviors include using a large vocabulary and creating metaphors and analogies, demonstrating a long attention span, beginning reading at an early age, exhibiting curiosity, sharing a sense of humor with others, learning rapidly and easily, attending to detail, and displaying a good memory. These children may also have superior physical coordination and at the same time become easily frustrated by their lack of fine motor coordination. They often have many mature, in-depth interests, a strong sense of moral values, and highly developed imaginations which allow them to create stories and songs. The children may be unusually sensitive to changes in their environments, have a heightened awareness of their own differences, and make mental connections between the past and the present. They are also sensitive to other children's needs and feelings and are often effective and efficient problem solvers in both social and academic settings.

Identification - Giftedness in young children is currently being identified through teacher and parent observations and rating scales, self-nomination via a tangible product, psychometrics, or creativity testing. An example of an observational scale for teachers is the Renzulli-Smith Early Childhood Checklist (Renzulli & Smith, 1981) and, for parents, Things My Child Likes to Do checklist (Delisle, 1979). Teachers should also note who other children follow or who directs activities, children who exhibit the characteristics mentioned above, or children who are advanced on developmental scales (see Beaty, 1986; Cohen & Stern, 1983). The most commonly used testing devices are the Stanford-Binet, the WISC-R, and the Goodenough-Harris Draw-A-Person Test (Harris, 1963). The Slosson Intelligence Test or the Peabody Picture Vocabulary Test are often initial screening measures, but are less valid. Creativity measures include the Torrance Test of Thinking Creatively in Action and Movement (1981) and the Wallach and Kogan Creative Battery (1965). Caution should be exercised in using creativity tests as a measure for giftedness because of concerns about their validity. Multiple criteria are recommended in the identification process.

A Few Examples - Young gifted children do not come wrapped in colorful paper nor do they all exhibit the musical abilities of the young Mozart sharing his first composition at the age of four or five. The following cases are more typical.

At age three, Zachary was content to spend hours experimenting with the various types of equipment available at the science table. He observed the ball rolling through the elaborate tunnel structure hundreds of times and made the water flow through the water wheel hour after hour. He tried to understand what was happening and figure out how and why these things occurred. He used his problem solving skills in social situations, also. When Dominic stumbled into the cars and elaborate road structure in the block corner, Zach simply moved the structure out of Dominic's pathway and helped Dominic begin his own building in another area.

Four-year-old Margaret sat with earphones perched on her head listening intently to a pre-recorded story. While this is not an uncommon activity in many preschool settings, Margaret's eyes followed the words on the page. Later, she read some of the book to a younger school chum. Margaret demonstrated her writing skills when she produced a complete story unassisted and with very little invented spelling. She showed her leadership abilities when she told another child, "Make a capital A like this" because he was struggling with making the lower case letter modeled on the board.

On the first day of school, Miles bounded into the first grade classroom reporting that, "At home we have a telescope and watch the stars and Mom and I feed the birds and would you like me to read to you from my book?!" Test results revealed that Miles had an above average intelligence and had mastered most of the first grade curriculum. The teacher modified the regular classroom program for Miles and allowed him to work independently at his own level. During the year, among many other activities, Miles wrote and illustrated a book about area birds, set up a bird feeding station outside the classroom windows, and made presentations to other classes about his area of interest. He also became an occasional peer tutor for less able classmates, often lead small group activities, and enjoyed the rough and tumble of the playground like any other six-year-old child.

Programming - Early childhood educators working with gifted children are often asked, "What is the best program for young gifted children?" The answer to this question is that no one program is best for every child. Finding the best program suggests developing one to meet a child's individual needs and interests which also meets parental philosophies for educating children, as well as a program that is developmentally appropriate for young children. Several options exist for meeting the special needs of the young gifted child. One choice is between homogeneous and heterogeneous grouping. Heterogeneous grouping is usually recommended since children are not generally gifted in all areas and should be with age-mate peers, as well as intellectual peers. This type of grouping allows for the development of positive self-concepts more than homogeneous grouping does, but this is not often a problem for young gifted children. A second programming choice is for acceleration and/or enrichment. Grade acceleration is effective for children who are maturationally ready. Part-time acceleration (within specific content areas, i.e. math or reading) can also be appropriate if support is given to that concept by teachers throughout schooling. Enrichment encourages the broadening or deepening of curricular content. It can be a successful way to provide for heterogeneous grouping and, at the same time, meet the particular needs of the gifted child. One concern, however, is that one classroom teacher may not be able to meet the needs of the young gifted child within the classroom setting and, at the same time, deal with all of the other children without additional assistance (aides, administrators, parents). Recommended curricular content for young gifted children includes teaching basic skills, building knowledge, developing creative and critical thinking skills, and providing for affective development (Kitano, 1986). These curricular strategies are appropriate for all children. More differentiated content includes opportunities for creative productivity as previously illustrated by Miles' bird book and feeding station described above or Mozart's early compositions (Kupferberg & Topp, 1978; Sloan & Stednitz, 1984).

Common concerns - There are some concerns which surround young gifted children. They are addressed briefly in the following statements.

1. Early identification of giftedness is important in order that the young child will be nurtured to his/her fullest potential and does not become an underachiever.

2. Parents need to value and carefully nurture the whole child, not just the part of the child that achieves academically. Parents must also be careful not to pressure their child and create problems with perfectionism or with affective development (see also Elkind, 1987).

3. Comparisons with other children should be avoided. Caution must be used when employing the "gifted" label lest siblings or peers be made to feel "ungifted" as a result.

Continued on page 15

JUST OFF THE PRESS

Gifted: Challenge and Response for Education

Joe Khatena, Mississippi State University

The intent of the book is to put into one place a representative sample of the most significant theory and practice on the subject. The book is solidly based on research and practice. It gives appropriate attention to subjects such as:

- the need to understand and identify the abilities of gifted children
- to get to know their developmental characteristics
- to be aware of the problems they face and how they may be assisted to overcome them
- the nature of their intellectual processes and methods that have effective productivity
- to survey various educational models designed for better learning
- to consider several of the most pertinent motivational approaches and their relevance for gifted education
- and to regard their education in terms of the past, present and future.

An unusually comprehensive treatment of diverse contributions to the field, the book captures the essences and essentials of the most innovative ideas, instructional materials, measurement approaches, theories in historical perspective, and modern technological correlates of giftedness. Rich in both psychological theory and educational philosophy and technology, the book fairly represents the many ideas and issues that have made gifted education an exciting one in recent years.

In addition, the book gives meaningful and significant examples and case studies of gifted children, guides identification of talent, provides strategies for developing creative imagination, and presents various checklists that focus attention on characteristics and attitudes, identification procedures of underachievement, and the like.

F. E. Peacock Publishers, Inc.
P. O. Box 397, Itasca, IL 60143-0397
(708) 350-0777

Stage and Structure in the Development of Children With Various Types of Giftedness. In R. Case (Ed.), *The Mind's Staircase: Exploring the Conceptual Underpinnings of Children's Thought and Knowledge*

Abstract

Marion Porath, University of British Columbia

This study investigated the cognitive development of gifted children from a neo-Piagetian perspective. Case's (1985) theory of intellectual development provided a model of executive functioning within stages of development. This model was seen as appropriate for addressing issues raised in the literature concerning the need for a process analysis of gifted children's thinking and the need to clarify to what extent a young gifted child's thinking can be considered similar to that of an older, less intelligent child. The study also sought to account for the results of Piagetian studies which are equivocal about the degree of developmental advancement evidenced by gifted children.

Children identified as gifted on both verbal and performance measures were compared to chronological and mental age control groups on measures chosen to provide a comprehensive description of gifted children's thinking within a developmental context. A group of verbally gifted children was compared to chronological and mental age control groups to test the hypothesis that the inconsistent results of Piagetian studies may be due to a disparity between verbal ability and the more spatially-loaded Piagetian tasks. In addition, a small group of spatially gifted children was compared to chronological and mental age control groups. Six-year-old gifted children were chosen for the study. Mental age controls were, on average, eight years old.

On measures which confounded learning with developmental level, gifted children performed like their MA peers. On measures which reflected development more exclusively, performance was not significantly different from their CA peers. In the case of children gifted on both verbal and performance measures, MA-equivalent abilities were demonstrated on the balance beam and letter series tasks, measures which would appear to require both verbal and spatial/performance abilities. Verbally gifted children told MA-equivalent stories and spatially gifted children drew MA-equivalent pictures. This finding suggests an alternative explanation for the findings of Piagetian studies, namely that some Piagetian tasks are learning confounded and some are not. Performance on tasks believed to be learning confounded was, however, limited to advancement of one substage. This suggests that there is an "optimal level" of development (Fischer & Pipp, 1984) which can be expected in certain problem solving situations, even for bright children.

A model of gifted children's thinking within Case's neo-Piagetian framework provided knowledge of structural level and processing capacities. Some specific abilities were also identified, such as linguistic and graphic maturity. These appeared to be independent of a general/developmental model and were much farther in advance of age expectations. Further research will address the nature of the relationship between these two types of knowledge and the implications for educational planning.

I would be pleased to hear from anyone with interest in developmental approaches to giftedness. Please contact:

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(604)822-6045 Fax (604)822-3302

References

Case, R. (1985). *Intellectual development: Birth to adulthood.* New York: Academic Press.

Fischer, K. W., & Pipp, S. L. (1984). Processes of cognitive development: Optimal level and skill acquisition. In R. J. Sternberg (Ed.), *Mechanisms of cognitive development* (pp. 45-80). New York: W. H. Freeman.

RESEARCH IN PROGRESS

Gifted Child Registry Home Environment Study

Ray H. Swassing, Ohio State University

The purpose of the Home Environment study is to apply a systems approach for understanding the influences of home life on the development of talent, particularly in homes where there are children who are both gifted and have physical and/or sensory disabilities (hearing and vision). A second group of families will include a gifted child or children and a sibling with a disability. The current experimental instrument, The Gifted Child Registry Home Environment Survey (GCRHES) (in fourth revision) is composed of 180 items divided among two forms (A and B). The items were developed from the literature using the concept of "presses" or environmental factors that promote abilities (Marjoribanks, 1972). To define a scale that is efficient and conceptually sound, data gathered with the two sets of forms will be analyzed and one form of 40 to 60 items will be developed. The final scale will be used as the basis for home training materials and activities for fostering abilities within family life settings. Given the limited number of children that meet these criteria, the Home Environment study is seeking a national and international database. For information and participation contact the author at Ohio State University, 356 Arps Hall, 1945 North High Street, Columbus, OH 43210. Telephone requests at (614) 292-8787.

Marjoribanks, K. (1972). Environment, social class, and mental abilities, *Journal of Educational Psychology, 63,* 103-109.

A Case Study of the Childhood Art Work of An Artistically Talented Young Adult

Enid Zimmerman, Indiana University

This case study focuses on the graphic development of a highly talented art student through retrospective accounts of his reactions to his spontaneous art work done from age 3 until he was in the tenth grade. Data from this case study appear to support claims that interactions among factors of biology, culture, skill mastery, personal disposition, and modeling after images of others can be used to explain insights into talented children's development in art.

In this study, ability to depict the world realistically is viewed as only one indicator of art talent. Some artistically talented young people's depiction of objects is influenced by Western spatial conventions; others depict visual narratives using details, theme and variations, humor, paradoxes, puns, metaphors, and deep emotional involvement. It is hypothesized that artistically talented young people may choose to work in one mode or another at different phases of their art development.

I am seeking information from others who might be conducting case studies of the work of artistically talented young people to compare with this one to substantiate or refute generalizations generated in this research. It is hoped that through such case studies an understanding of how art talent develops and new ways of identifying artistically talented students may emerge.

Study of Precocious Youth

Cheryl E. Sanders, Iowa State University of Science and Technology

The Study of Mathematically Precocious Youth at Iowa State University (SMPY at ISU) is conducting a longitudinal study of individuals identified as verbally, but especially mathematically, gifted. SMPY officially started under Dr. Julian C. Stanley's leadership in 1971 at Johns Hopkins University; the longitudinal study continues under the direction of Dr. Camilla P. Benbow at Iowa State University. Youth who reason extremely well mathematically and verbally are identified in 7th and 8th grade via talent searches using tests designed for college-bound high school students, the SAT and more recently the ACT. Selected samples from these talent searches, which will cover a 20 year period, are being studied through their adult lives. The purpose of this follow-up study is to characterize the process whereby childhood potential unfolds into adult achievement and then identify the factors that impact upon that process. Investigated are the development, needs, and characteristics of intellectually able students. In addition, the longitudinal study helps evaluate the impact of various educational options upon gifted children's development. SMPY's ultimate goal is to utilize the knowledge gained through research to improve both the quality and speed of gifted students' education, as well as to gain a better understanding of the nature, nurture, and consequences of mathematical and verbal precocity.

But What About the Prom

Kathleen Noble, University of Washington

Many adults consider radical educational acceleration to be detrimental to adolescents, largely because of the perceived social benefits of attending high school. But many young people consider these benefits to be dubious, at best, and are quite happy to forego them. How do students who elect to skip high school in favor of early university entrance evaluate their choice? This study investigated the perceptions and experiences of 25 students who are currently enrolled in the University of Washington through participation in the Early Entrance Program (EEP). All entered the UW before the age of 15 without attending high school. The principal investigator, Dr. Kathleen Noble, and her research assistant, Julie Drummond (a UW junior and "EEP'er"), conducted interviews with a large sample of EEP students and all members of their preparatory faculty to answer a number of questions (e.g., why students and their families chose this option, what characteristics are needed to succeed within the EEP, how important is the presence of a peer group, how do professors and regular-age classmates relate to their presence, and what are the advantages and disadvantages of radical educational acceleration?). Data from these interviews are currently being analyzed and will be published upon completion.

RESEARCH IN PROGRESS

A Comparison of Two Painting Teachers of Talented Early Adolescent Art Students

Enid Zimmerman, Indiana University

The purpose of this study was to describe, analyze, contrast, and compare characteristics of two painting teachers to determine what factors might be crucial in successful teaching of talented early adolescent art students. In on-site case studies in the art classrooms, observations, interviews with students and their teachers, time sampling, analysis of student application forms, observer journals, and group conversations with students and observers were used to collect data.

Although art work produced in both classes was at a high level, and students evaluated both teachers positively, one teacher appears to have presented a more coherent and complete experience than the other. This conclusion is based on the observation that success in an art class is the result of more than simply teaching talented young people technical skills. The proactive teacher was able to develop an environment conducive to active learning, make significant curricula and instructional decisions, and generate an interest in learning and thinking among his students.

These case studies call into question established methods of evaluating success of teachers of talented young people through student products and interviews. I am interested in contacting others who are conducting similar research to determine if generalizations from this study might be accepted or refuted.

Scoring Divergent Thinking Tests Using Total Ideational Output and a Creativity Index

Mark A. Runco, Wayne Mraz
California State University, Fullerton

Several educational theorists have suggested that divergent thinking should be encouraged in the classroom. There are, however, various problems with the scoring techniques currently used with tests of ideational creativity. The present investigation tested two possible improvements in scoring procedures. The first potential improvement involved ratings of total ideational output. This procedure is in direct contrast to the conventional scoring of single ideas. The second improvement was to score ideational sets specifically for creativity rather than for the conventional indices (e.g., originality, flexibility, and fluency). The utility of these potential improvements was determined by calculating the reliability and discriminant validity of scores based on examinees/ total ideational output. Ideational output was judged by 30 college students (mean age of 27 years). The ideas that were rated were given by 24 adolescents who had received two Uses tests (shoe and tire) and two instances tests (strong things and things on wheels). Results indicated that the ratings of total output had high inter-rater reliabilities and moderate inter-item reliabilities. There was, however, poor discriminant validity between judges' ratings of creativity and ratings of intelligence. The results are interpreted in the context of theories of creativity.

Improving the *Parental Evaluation of Children's Creativity*

Mark A. Runco, Diane Johnson
California State University, Fullerton

This investigation is a simple extension of social validation research reported by Runco (1989). He developed the Parental Evaluation of Children's Creativity (PECC). We intend to modify that measure, using much the same methodology as before. In particular, we plan to administer the Adjective Check List (ACL) (Gough & Heilbrun, 1980) to several groups of adults. The adults will be asked to complete the ACL once to describe a creative child, and once to describe an uncreative child. Half of the group will receive the "creative child" instructions first, and the other instructions for completing the ACL will be taken from Gough and Heilbrun (1980), with the only change being the specification of "creative" or "uncreative child." The intent is to find 20-30 adults in each of the four groups: parents who have never taught; teachers who are not parents; parents who have taught; and adults who are neither teachers nor parents. This will improve upon the earlier measure in that only experienced parents (with no teaching experiences) will be used. (Teachers' ratings can be obtained with the "socially valid" Teachers' Evaluation of Students' Creativity (TESC; Runco, 1984, 1987).) Additionally, as it stands, the PECC only contains indicative items. Theoretically, it should also include contraindicative items. Hence the questions about uncreative children.

NRC/GT: *Update of Year 2 Activities*

From page 5

Learning Outcomes Study - The University of Virginia

- Self-concept assessment
- Content assessment
- Motivation assessment
- Behavioral adjustment assessment by teachers and parents

Theory-Based Approach to Identification, Teaching, and Evaluation - Yale University

- High school psychology text
- Triarchic abilities test
- Assessment of intelligence
- Problem solving/thinking skills
- Product development
- Curriculum match to intellectual style

The resulting matrix is several pages and it really illustrates how our studies reflect the educational issues of interest at the national level. An abbreviated version of the matrix, listing the studies without the major elements, is displayed in this newsletter.

Future issues of the NRC/GT Newsletter will summarize more findings from our Year 1 studies. We will also keep you apprised of the NRC/GT publications at national conventions.

The National Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Eva L. Baker, Robert L. Linn, University of California, Los Angeles

The National Center for Research on Evaluation, Standards, and Student Testing (CRESST) marks its first anniversary this October. CRESST, whose primary offices are located on the UCLA campus, is involved in the improvement of educational quality through advanced assessment research and development. CRESST is committed to serving educational policymakers, practitioners, and the public through a variety of services, including an extensive research database of over 340 assessment reports, monographs, and papers. Copies of these reports are available through the Center by calling (213) 206-1512.

For other types of assistance on current CRESST assessment programs or if you would like to discuss your current program with a CRESST project director, please call the Center at (213) 206-1532. Or write to CRESST/UCLA, Graduate School of Education, 145 Moore Hall, 405 Hilgard Avenue, Los Angeles, California 90024-1522. CRESST is committed to serving anyone involved or interested in assessment research and is happy to help you in any way possible.

Congratulations to a G/T Colleague

Special congratulations go out to Dr. Gwendolyn Cooke from her friends and colleagues at The National Research Center on the Gifted and Talented and The University of Connecticut. Gwendolyn is a graduate of the Teaching the Talented Program and she has been named urban services director at the National Association of Secondary School Principals (NAASP).

Gwendolyn's role at the NAASP will be to develop programs to strengthen the leadership skills of principals and assistant principals in urban schools. As a former principal in Baltimore, Maryland, we know that she will bring her multiple talents and experiences to the nation's largest organization of school administrators.

Young Gifted Children

From page 11

4. Parents and teachers must listen to gifted children. They should allow them time to think and to play and provide the opportunities for children to expand to their fullest potential as they indicate their specific interests and abilities.

5. Gifted children need the guidance and wisdom of adults; they may possess a greater degree of ability in a given area, but they do not know everything.

6. Gifted children have the right to an education that meets their special needs; well-informed advocacy is the role of both parents and teachers.

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The National Research Center on the Gifted and Talented

NRC/GT

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NRC G/T

The National Research Center on the Gifted and Talented NEWSLETTER

March 1992

THE UNIVERSITY OF CONNECTICUT · THE UNIVERSITY OF GEORGIA · THE UNIVERSITY OF VIRGINIA · YALE UNIVERSITY

NRC/GT: The Latest News from The Directorate

E. Jean Gubbins, The University of Connecticut

We have had a wonderful response to our work at The National Research Center on the Gifted and Talented. All our contacts with the Collaborative School Districts, Consultant Bank members, State Directors of Programs for the Gifted and Talented, National Research Center Advisory Council, and State Parent and Teacher Organizations have been very positive. You have all helped us to get the word out about our research studies through newsletters, personal communications, and conferences. We have received copies of newsletters from around the country highlighting specific findings from Year 1 studies. Thanks to all of you for helping us maintain such an extensive dissemination plan.

Further updates of several Year 1 studies are the focus of this newsletter. You will learn more about:

1. Regular Classroom Practices with Gifted Students: Findings from the Classroom Practices Survey
2. The Classroom Practices Study: Observational Findings
3. The Curriculum Compacting Study
4. Investigations into Instruments and Designs Used in the Identification of Gifted Students and the Evaluation of Gifted Programs
5. The Learning Outcomes Study
6. A Theory-Based Approach to Identification, Teaching, and Evaluation of the Gifted

The University of Connecticut Research Site, under the direction of Dr. Francis X. Archambault, was responsible for implementing studies 1-3. On January 27, 1992, we held a press conference to announce the results of these studies and received extensive local, state, and national newspaper, radio, and television press coverage. The studies have generated considerable interest and the follow-up requests for more information on curriculum compacting and classroom practices have been extensive. We have been mailing information daily and returning numerous phone calls.

In addition to the 14 studies being conducted over the past two years at the Research Center, we have been working on the commissioned papers from the Research-Based Decision Making Series. The paper by Dr. Karen Rogers on *The Relationship of Grouping Practices to the Education of the Gifted and Talented Learner* has been well received. Orders for the executive summary and full-length paper are filled daily. In several instances, the findings from the paper have been used as the basis for other articles such as one by Lee Wolf, Iowa Department of Education, entitled *Grouping and the Gifted: A More Thoughtful Look* in the *Iowa Talented and Gifted Newsletter* (January 1992). One comment by Wolf that is quotable is: "Doing away with gifted education programs because tracking is detrimental to less able students is making too much soup from one carrot."

Look for announcements in this newsletter for other papers in the Research-Based Decision Making Series on ability grouping by Dr. James Kulik, cooperative learning by Dr. Ann Robinson, and self-concept by Dr. Robert Hoge and Dr. Joseph Renzulli. The information in these papers will help you build a strong case for creating, maintaining, or expanding programs for students with special gifts and talents.

One "small" study that we are now implementing with our Collaborative School Districts and Consultant Bank members that extends the scope of our present NRC/GT research agenda is known as Assumptions Underlying the Identification of Gifted and Talented Students. This study is an opportunity to involve our contacts in the role of "teachers as researchers." The contact persons are working with a sampling plan to obtain responses from teachers, parents, and administrators on survey items on identification — a topic that is often debated and always a concern when you begin to outline program plans. We have received hundreds of responses from over 30 states and 1 territory on items focusing on testing, student background, non-intellectual factors, and case study data. If you have not returned your surveys, there is still time.

The Collaborative School District network continues to expand. As of February 1, 1992, there are 283 districts involved with the Research Center. Welcome aboard goes out to:

Weston Public Schools
Weston, CT

Harford County Schools
Bel Air, MD

Hardin Public Schools
Hardin, MT

Contoocook Valley, SAU #1
Peterborough, NH

Eastern Camden County Schools
Vorhees, NJ

Lincoln School District
Lincoln, RI

Custer School District #1
Custer, SD

Once again, we would like to invite readers to submit articles for the *NRC/GT Newsletter* in three areas: Commentary, Just Off the Press, and Research in Progress. We would be happy to review your work. One article that appeared in the June 1991 newsletter by Linda L. Manwill entitled *Talented and Gifted Education in Rural Alaska: A Universal Model* became the focus of another article in *The New Republic* (December 16, 1991). Therefore, your submissions will reach 4,000 readers of the *NRC/GT Newsletter* and possibly thousands more around the country. Send your submissions to:

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Regular Classroom Practices with Gifted Students: Findings from the Classroom Practices Survey

The University of Connecticut

Francis X. Archambault, Jr., Karen L. Westberg, and Scott W. Brown

The Classroom Practices Study was designed to determine the extent to which gifted and talented students are receiving differential education in the regular classroom setting. It addressed five research questions:

1. What instructional practices are used with gifted and talented students in classrooms across the country?
2. Do teachers modify instructional practices and curricular materials to meet the needs of gifted and talented students?
3. Do regular classroom teachers in various parts of the country provide different services for the gifted?
4. Do regular classroom teachers in various size communities provide different services for the gifted?
5. Are there differences in the types of regular classroom services provided to gifted students in districts with and without formal gifted programs?

These questions were addressed through a nationwide survey of over 7300 third and fourth grade teachers and systematic observation of 46 classrooms drawn from the survey sample. This article presents the results of the Classroom Practices Survey. Classroom observation findings are discussed in a separate article.

The sample was restricted to grades three and four since the large majority of gifted programs occur at the elementary level. The sample was constructed to enable comparison of teacher responses from various parts of the country and from various types of communities. Bureau of the Census definitions were used to classify states into regions (Northeast, South, North Central, and West). Schools were classified according to zip codes and Metropolitan Statistical Areas (MSA) into community types (urban, suburban, and rural). Using standard stratified random sampling procedures, a general sample of 3993 teachers was drawn. Using similar procedures, five additional samples were also selected. These included teachers in private (i.e., predominately church-related) schools (n=980) and teachers in schools with high concentrations of four types of ethnic minorities, namely, African-Americans (n=592), Asian-Americans (n=587), Hispanic-Americans (n=579), and Native-Americans (n=580). The response rate across the 6 samples was approximately 50%.

The *Classroom Practices Teacher Survey* solicited information on the background of teachers, the policies and procedures their schools and districts had adopted for educating gifted students, and the classroom practices teachers used with gifted and average students. Teacher reports of their own behavior with both types of students provided a measure of the extent to which gifted students were receiving an enriched or differentiated education. Teachers responded to each of the 39 items in the classroom practices portion of the survey first for average and then gifted students using a scale which included the following responses: once a month or less, a few times a month, a few times a week, daily, and more than once a day.

To increase the interpretability of the results, the 39 items were reduced to 6 factors or scales using principal factor analysis: (1) Questioning and Thinking; (2) Providing Challenges and Choices; (3) Reading and Written Assignments; (4) Curriculum Modifications; (5) Enrichment Centers; and (6) Seatwork. The variance accounted for by this solution, which included all but two of the 39 items, was 38%. Alpha reliabilities for the six factors were .84, .80, .78, .74, .72, and .53, respectively.

The most salient survey finding is that classroom teachers make only minor modifications in the regular curriculum to meet the needs of gifted students. This result was found for public and private schools, and for public schools with high concentrations of African-American, Asian-American, Hispanic-American, and Native-American students as well as for classrooms in various parts of the country and various types of communities.

Although the results clearly depict only small differences between gifted and average students, it should be noted that the repeated measures MANOVAs produced statistically significant results favoring the gifted across all samples and scales. Cohen (1988) and others have argued that since small differences can be statistically significant when sample sizes are large, as was the case in the present research, the magnitude of the effects must also be considered when interpreting results. Most of the effect sizes were very small or negligible (below .2), thus leading to the conclusion that classroom teachers make only minor modifications in the regular curriculum to meet the needs of the gifted.

Acknowledging that the modifications are minor, teachers who provide for the gifted are likely to assign them advanced readings, independent projects, enrichment worksheets, and reports of various kinds. Some classroom teachers also attempt to eliminate material that students have mastered, provide the opportunity for more advanced level work, give gifted students some say in how classroom time is allocated, and expose gifted students to higher level thinking skills. However, gifted students are given no more opportunity than average students to work in locations other than the regular classroom, to use enrichment centers, to pursue self-selected interests, to work in groups with students having common interests, to move to a higher grade for specific subject area instruction, to work with students of comparable ability across classrooms at the same grade level, to work on an advanced curriculum unit on a teacher-selected topic, to participate in a competitive program focusing on thinking skills/problem solving, or to receive concentrated instruction in critical thinking and creative problem solving. Further, most gifted and average students appear to participate in these experiences only a few times a month or less.

The *Classroom Practices Teacher Survey* also demonstrated that the regular classroom services provided to gifted students in schools with formal gifted programs are similar to those provided in schools without formal programs. This finding supports at least two conclusions: (1) that regular classroom teachers in districts with formal programs rely on the gifted resource teacher to meet the needs of gifted students; and (2) that gifted resource teachers have little effect on what classroom teachers do to meet the needs of the gifted, probably because these resource teachers have served primarily in a teaching role.

The results of this survey paint a disturbing picture of the types of instructional services gifted students receive in regular classrooms across the United States. Since most gifted students spend all but two or three hours per week in this environment, one could easily argue that they deserve more. Further, since many districts have eliminated or are in the process of eliminating resource room programs due to economic problems or concerns about the equity of grouping students homogeneously, the future appears even more bleak than the present.

What can be done to improve the education of gifted students? First, every effort should be made to continue, and where feasible even expand, gifted programs, thereby bringing gifted students in contact with teachers who are specially trained to meet their needs. If finances or other considerations dictate that resource rooms be eliminated, new and more concentrated efforts must be made to help classroom teachers provide gifted students with an enriched curriculum. These efforts must certainly include the development of curriculum materials specifically designed for classroom teacher use. They must also result in new approaches for training teachers to use the new materials, to identify the gifted, to compact the regular curriculum, and to become more flexible in meeting the needs of all students, including the gifted. To enable this to occur, a redefinition of the role of gifted specialist may be in order. Instead of spending the large majority of their time as a teacher of gifted students, gifted specialists of the future may be asked to spend significant portions of their time training regular classroom teachers. Thus, rather than serving primarily as a resource to students, gifted specialists may spend more of their time serving as a resource to teachers.

The authors would like to acknowledge Dawn Guenther, NRC/GT Dissemination Coordinator, for her assistance in the preparation of this article.

The Classroom Practices Study: Observational Findings

Karen L. Westberg, Francis X. Archambault, Jr., Sally M. Dobyns, Thomas J. Salvin
The National Research Center on the Gifted and Talented, The University of Connecticut

The Classroom Practices Observational Study, the second aspect of the Classroom Practices Study, was designed to verify and extend the findings from the Classroom Practices Survey administered to over 7000 third and fourth grade teachers. The Classroom Practices Study was designed to determine if and how classroom teachers meet the needs of gifted and talented students in the regular classroom. For the observational study, semi-structured observations were conducted in 46 third or fourth grade classrooms that represented school districts within the four regions of the country, as designated by the U.S. Census Bureau and districts in rural, suburban, and urban communities. Twenty-six classrooms were in schools that provided formal gifted education programs; twenty classrooms were in schools that did not have formal gifted programs.

Nonparticipant observation and semi-structured interviews were selected as the data-gathering techniques for the study. An observation instrument entitled The Classroom Practices Record (CPR) was designed to document the extent to which gifted and talented or high ability students receive modifications in curricular activities, materials, and teacher-student verbal interactions in the classroom. Codes on the CPR instrument were used to record the types of instructional activities, the size of the groups, the composition of the groups, verbal interactions, and the length and types of differentiation experienced by the target gifted and talented or high ability student during reading, language, mathematics, social studies, and science classes.

The CPR was used to record information on two target students, one gifted and talented or high ability student and one average ability student, in a classroom. By observing two target students, it was possible to compare the curriculum and instruction provided to these students in the same classroom. Trained observers spent two days in each classroom; therefore, across the 46 sites, 92 target students of each ability level were observed. Observers used student roster information provided in advance by classroom teachers and a specific protocol to select the target students for each observation day. Systematic selection procedures were developed to ensure the inclusion of minority or economically disadvantaged students in the sample. Observations and interviews were conducted in the spring of 1991, two to four months before the end of the academic year.

Descriptive statistics and chi-square procedures were used to analyze the data. A content analysis procedure was used to synthesize the anecdotal information from the daily summaries written by the observers. The major findings from the study are summarized below.

The results of the quantitative analyses indicated that the target gifted and talented or high ability students received a limited amount of differentiation in reading, language, mathematics, science, and social studies instruction. For the purposes of this study, six codes were used to record evidence of differentiation: advanced content instruction, advanced process instruction, advanced product or project instruction, independent study with assigned topics, independent study with self-selected topics, and other differentiation experiences. Across all five subject areas, the target gifted and talented or high ability students received no differentiated experiences in 84 percent of the activities in which they were involved. This was examined further by comparing these practices in schools that did and did not have formal gifted programs. In classrooms with formal gifted programs, the target gifted students received no differentiation of any sort in 84.1% of the activities; and, in schools with no gifted programs, no differentiation was observed in 84.4% of the activities.

Fourteen types of instructional activities were coded within each subject area: audio visual, demonstration, discussion, explain/lecture, games, non-academic activity, oral reading, project work, review/recitation, silent reading, simulation/role playing, testing, verbal practice or performance, and written assignments. Across all five subject areas, the target gifted and talented or high ability students were most frequently involved in written assignment (26% of the time) and review/recitation (13% of the time) activities.

The size and the composition of the instructional groups in which the target gifted and talented or high ability students participated were also examined. For the majority of the time within each subject area, students participated with the entire class. They worked individually for only 12% of the time and in small groups (2-6 students) only 13% of the time across the five subject areas.

In addition to recording the size of the groups, observers recorded the composition of the groups, i.e., homogeneous grouping or heterogeneous grouping, in which the target gifted students worked during instruction in the five subject areas. Target gifted and talented or high ability students were homogeneously grouped according to achievement or ability level for 40 percent of the time in mathematics and for 29 percent of the time in reading. Across all five subject areas, these students received instruction in homogeneous groups only 21 percent of the time.

Several analyses were conducted on the types of questions and the wait times provided with questions to target students. Codes were used to record the following types of verbal interactions: knowledge-comprehension question, higher-order question, and explanation or comment between or among the teaching adult, target gifted student, target average student, non-target students, and students-at-large. Wait time, the length of elapsed silent time after a question, was also recorded. For this study, wait time of three seconds or more was recorded. No significant differences in question types (knowledge/comprehension versus higher order thinking skills) were found between the target gifted and talented or high ability and target average students. A statistically significant, but weak association was found between the two groups of target students and the number of questions that were accompanied by at least three seconds of pre-response wait time; namely, more wait time was provided to average ability students than to gifted students.

The results of the content analysis procedure for observers' daily summaries corroborated the findings from the descriptive and chi square statistical results. The results of all analyses indicated that observers found little differentiation in instructional and curricular practices, including grouping arrangements and verbal interactions, for gifted and talented students in the regular classroom.

Despite several years of advocacy and efforts to meet the needs of gifted and talented students in this country, the results of this observational study indicate that little differentiation in the instructional and curricular practices is provided to gifted and talented students in the regular classroom. This is of particular concern because special programs for gifted learners outside of the regular classroom are being eliminated in many parts of the country due to economic cutbacks. When this occurs, the needs of gifted and talented students must be addressed in regular classrooms. Even if a gifted program exists, however, it may only provide 1-2 hours of instruction per week to identified students, making the classroom teacher's role even more essential. If gifted education is to become increasingly mainstreamed, provided in the regular classroom, several implications from this study should be considered for the education of gifted and talented students.

NRC/GT RESEARCH STUDIES

The Curriculum Compacting Study

The University of Connecticut

Sally M. Reis

During the 1990-1991 academic year, The University of Connecticut site of The National Research Center on the Gifted and Talented conducted a study to examine the effects of staff development on elementary teachers' ability and willingness to implement a technique entitled curriculum compacting. This technique is designed to modify the regular curriculum to meet the needs of gifted and talented students in the regular classroom. We were interested in determining how much curriculum content could be eliminated for high ability students by teachers who had received various levels of staff development. We investigated what would happen to students' achievement test scores, content area preference and attitude toward learning if curriculum compacting was implemented. To participate in this study, districts had to meet the following criteria: (1) no previous training in curriculum compacting, and (2) accept random assignment to treatment groups. Efforts were made to recruit districts with elementary student populations that included economically disadvantaged and limited English proficient students. Teachers in twenty school districts from throughout the country were randomly assigned by district to three treatment groups that received three different levels of staff development. After receiving staff development services, teachers implemented curriculum compacting for one or two students in their classroom who were selected because of their advanced academic abilities. A group of seven districts was randomly assigned as control groups.

Three escalating levels of staff development which are described below were provided to the treatment groups.

Description of materials used for staff development:

Treatment No.1:
- 2 Videotapes (1 hour total) explaining how to compact curriculum
- 1 Book including more explanatory information about how to implement curriculum compacting (130 pages)
- Related articles/examples

Treatment No. 2:
- 2 Videotapes (1 hour total)
- 1 Book including more explanatory information about how to implement curriculum compacting (130 pages)
- Related articles/examples
- Group compacting simulations and practice conducted by local gifted and talented education consultant

Treatment No. 3:
- 2 Videotapes (1 hour total)
- 1 Book including more explanatory information about how to implement curriculum compacting (130 pages)
- Related articles/examples
- Group compacting simulations and practice conducted by local gifted and talented education consultant
- Local consultant services and peer coaching experiences

The control group teachers identified one or two high ability students and continued normal teaching practices without implementing curriculum compacting. A battery of achievement tests (out-of-level Iowa Tests of Basic Skills - ITBS), content area preference scales, and a questionnaire regarding attitude toward learning were given to identified students in November 1990 and at the completion of the school year.

The following statements represent some of the findings from the curriculum compacting study:

1. Ninety-five percent of the teachers were able to identify high ability students in their classes and document students' strengths.
2. Approximately 40-50% of traditional classroom material was compacted for selected students in one or more content areas in mathematics, language arts, science and social studies.
3. The most frequently compacted subject was mathematics, followed by language arts. Science and social studies were compacted when students demonstrated very high ability in those areas.
4. A majority of the teachers in all treatment groups said they would compact curriculum again; some said they would try again if they had additional information and assistance from a specialist.
5. A significant difference was found among treatment groups with respect to the overall quality of curriculum compacting, as documented on a form called "curriculum compactor." Treatment group 3 had significantly higher quality compactors than did treatment groups 1 or 2.
6. Eighty percent of the teachers were able to document the curriculum that high ability students had yet to master, list appropriate instructional strategies for students to demonstrate mastery and document an appropriate mastery standard.
7. Replacement strategies consisted of three broad instructional activities: enrichment, acceleration and other (i.e., peer tutoring, cooperative learning, correcting class papers).
8. Teachers in treatment group 3 used significantly more replacement strategies than did teachers in treatment groups 1 or 2.
9. While approximately 95% of teachers used enrichment as a replacement strategy, 18% of teachers also used acceleration.
10. Replacement strategies did not often reflect the types of advanced content that would be appropriate for high ability students, indicating that additional staff development, as well as help from a specialist in the district, would be beneficial.
11. Approximately 60% of the replacement strategies reflected students' interests, needs and preferences.
12. Anecdotal records indicated that three different types of requests were made by teachers as they compacted curriculum:
    - Additional time for students to work with the gifted specialist (if one was available)
    - Assistance in locating additional appropriate materials
    - Consultant assistance as teachers worked through the compacting process.
13. When teachers eliminated as much as 50% of the regular curriculum for gifted students, no differences in the out-of-level post achievement test (ITBS) results between treatment and control groups were found in Reading, Math Computation, Social Studies and Spelling.
14. In Math Concepts and Science, all 3 treatment groups scored significantly higher on the out-of-level post test (ITBS) than did the control group whose curriculum was not compacted.

This study demonstrates the following:
- Curriculum compacting can be implemented in the regular classroom to provide more appropriate educational experiences for gifted and talented students.
- Staff development and peer coaching can improve teachers' use of the compacting process.
- Teachers will need additional training and help to be able to substitute appropriately challenging content and work to students whose curriculum has been modified.
- Curriculum compacting can have positive effects on students.

This research has implications for all who are concerned about the achievement of gifted and talented students.

NRC/GT RESEARCH STUDIES

Investigations into Instruments and Designs Used in the Identification of Gifted Students and the Evaluation of Gifted Programs

The University of Virginia

Carolyn M. Callahan, Paula Pizzat

As we look back on Year 1 of the identification/evaluation (ID/EVAL) research project, we recall our sense of anticipation as the steady stream of mail arrived at Lambeth House on the grounds of the University of Virginia. Staff members of the NRC/GT used computerized data-base searchers to gather all available literature on gifted identification and evaluation practices. Dissertations by authors around the country were reviewed and summarized for current practices, as well as for reliability and validity data. Our correspondence included letters and papers from professionals who submitted their most recent work pertinent to the study. Reading, cross-references, and filing over five hundred responses from school districts were all part of the preparation for the second year of NRC/GT activities. This summer, we coded and recoded the files of data into categories and began to summarize the State of the Art in Identification Practices Across the Nation.

It is a pleasure to report that the National Repository Data-base for Identification and Evaluation Instruments is now operating and underway. From the hundreds of files received from school districts and educators of the gifted, the staff of the NRC/GT has catalogued and entered data describing published and nonpublished instruments, as well as the most recent test reviews, and articles pertaining to these instruments for use with the gifted. At this writing, 244 locally developed instruments, 160 test reviews, 85 journal articles, dissertations and reports are in the various data-bases.

Staff members trained to use the *Scale for Evaluating Gifted Identification Instruments* (SEGII) are currently reviewing published instruments from the inventory of over 200 tests (using the new SEGII, developed during the first year of the NRC/GT.) We rate each instrument according to its usefulness in identification and relative to the variety of definitions and constructs of giftedness for which it might be used. Our evaluation includes close scrutiny of the several types of validity and reliability, so that the NRC/GT will be able to provide comprehensive ratings of instruments for identifying gifted youngsters.

One of our first pilot studies on a locally developed instrument is underway. We are field testing the Diet Cola Test, an instrument to measure science process skills and abilities. Over 250 fourth through eighth graders from Collaborative School Districts with high minority populations are participating in this research. We look forward to the first round of reliability data in early 1992. Other locally developed instruments with reliability, validity and potential for identifying gifted students will be investigated through tests of reliability this spring semester.

Other collaborative activities with school districts include the preparation of the monograph, *Contexts for Promise: Noteworthy Practices in the Identification of Gifted Students.* We have signalled cases of promising practices in gifted education from the Javits Grants projects across the country, and have received confirmation from the following sites: Atlanta Public Schools, Montgomery County Public Schools in Maryland, Urban Scholars Program/University of Massachusetts-Boston, University of New Mexico, The Arts Connection/New York City, Kent State University, and the University of Wisconsin at Whitewater. Each site will prepare a chapter describing their unique project or research regarding the identification of gifted students. Also this winter, educators from four Collaborative School Districts have agreed to be interviewed about their promising practices in the field of gifted education. Information gleaned from these sites will provide the basis for additional chapters in the monograph.

At the University of Virginia we are also investigating the characteristics of program evaluations that encourage improvements in gifted programs. Ten districts have been identified from the National Repository as programs to study in this recent research. We will examine what makes effective and ineffective evaluations, as well as the use of information that affects the implementation, decision-making, or perceptions of programs for gifted learners.

Finally, our other research in progress includes reviewing and rating evaluation instruments using the same process and the newly developed *Scale for the Evaluation of Program Evaluation Instruments* (SEPEI). For further information contact:

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The National Research Center on the Gifted and Talented
University of Virginia
Curry School of Education
405 Emmet Street
Charlottesville, VA 22903

The University of Connecticut Research Site held its first press conference on January 27, 1992 announcing the findings of the Classroom Practices Survey, Curriculum Compacting Study, and Classroom Practices Observation Study conducted by Dr. Francis X. Archambault, Dr. Sally M. Reis, and Dr. Karen L. Westberg, respectively.

The Learning Outcomes Study

The University of Virginia

Marcia A.B. Delcourt, Lori Bland

The Learning Outcomes Study at the University of Virginia is a two-year investigation of academic and affective changes in students during their first two years in a gifted program (see NRC/GT Newsletter, November 1991). The study compares students enrolled in gifted programs, high ability students from districts where no program is available at the designated grade levels, and students in regular classrooms. Students from five types of program models are compared: within-class programs, pull-out programs, special classes, special schools, and no program. These children were assessed during the fall and spring of the 1990-91 academic year and will be assessed again at the beginning and end of the 1991-1992 school year. Effects of the program will be measured through multiple administrations of an achievement test, an attitudes toward learning survey, self-perception and motivation inventories, and teacher ratings of student learning, creativity, and motivation. An important dimension of the project is the examination of program effects on students from culturally diverse populations.

Initial Results: Year One

We first examined the descriptive characteristics of our sample. We found that students starting their first year in gifted programs scored approximately one year above grade level in academic achievement. For example, the average 2nd grade gifted student scored at about the 3rd year, 1st month grade level in Reading Comprehension, and the average 3rd grade high ability student scored at about the 4th year, 6th month in Reading Comprehension. Schools typically selected high achieving students for their gifted programs and these children continued to achieve at this level as indicated by spring testing. In analyzing the data from the first year of the study, we were interested in focusing on the academic and affective outcomes for White and Black female and male students in different types of programs as measured by "change scores." These values represent the difference between scores from the fall and spring.

Achievement. Initial findings indicate that students in special schools showed the most significant gains in Mathematics Problem-Solving, Social Studies, and Science when compared to students in all other types of programs. Students in pull-out programs had the highest scores in both the fall and the spring for Science. When looking across all program types, White students had higher mean scores for Science achievement in the fall and the spring; however, Black students showed a significantly greater gain in Science achievement than White students. These findings may be due to the fluctuations in curriculum across the different programs and it is important to track this progress over another year to examine whether or not this gain continues.

Attitudes toward learning. For students in special schools, we found that attitudes toward learning scores were higher for White males than for White females. In fact, attitudes toward learning for White females in special schools actually decreased. The change in attitudes toward learning for Black males in pull-out programs was more positive than the change in attitudes for Black females from these same programs. In this situation, attitudes toward learning for Black females also decreased. These patterns need to be observed over the next two data collection periods to examine their stability. Do the attitudes toward learning processes for females continue to decline? If so, do they decline at a faster rate than the attitudes of males? This issue may develop into a question for the follow-up study already under way as a sample of students and teachers in particular programs will be contacted concerning their experiences in their respective programs for the gifted.

Self-perception and self-motivation. Results from this research agree with the literature on self-concept regarding at least one aspect: There is no clear pattern for increases or decreases in different areas of self-perception for students in gifted programs. Two general theories have been postulated. One states that the self-concepts of gifted students should be high, related to their levels of high achievement, while another hypothesis predicts that self-concepts will be lower for students placed into gifted programs due to increased scholastic competition. Patterns from this research study reveal mixed results with students from specific programs showing both significant increases and decreases across different subscales of self-perception and self motivation. For example, students from pull-out programs showed the greatest gains in perceived Scholastic Competence, but had a significant decline in their scores on the Preference for Challenge subscale.

Teacher Ratings. The most striking pattern among these data is the lower change score for teacher ratings of students in special schools as compared to students in all other types of programs. Teachers in special schools rated students about the same in Learning and Motivation at the beginning and end of one academic year, but their ratings of student Creativity decreased over this same period (instrument-*Scales for Rating the Behavioral Characteristics of Superior Students*, Renzulli, Smith, White, Callahan, & Hartman, 1976). A possible explanation for the improved ratings for students in the other program categories is the point of reference used by teachers. In other words, teachers rating students from separate class programs, pull-out programs, within class programs, and comparison groups may have been comparing the characteristics of the subjects in the study to the characteristics of the many students in their classes and schools, therefore, seeing a greater gain in these characteristics and rating them above average more often than did the teachers from special schools. Another explanation for lower change scores from special school programs is related to the restriction of range for these scores. Since students in special schools entered their gifted programs with the highest mean scores for Motivation and Creativity and teachers provided consistent ratings during the spring, these scores showed the least amount of change over time.

In summary, the results reported here are still preliminary since this is the first year of this two-year study. The longitudinal design will provide important information concerning trends of behaviors. A qualitative follow-up to this study is already underway to investigate issues related to curriculum, environment, and program arrangement for each type of gifted program. For additional information about this project, write to:

Dr. Marcia Delcourt
Curry School of Education
275 Ruffner Hall
405 Emmet St.
University of Virginia
Charlottesville, VA 22903

Reference

Renzulli, J.S., Smith, L.H., White, A.J., Callahan, C.M., & Hartman, R.K. (1976). *Scales for rating behavioral characteristics of superior students.* Mansfield Center, CT: Creative Learning Press.

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YALE UNIVERSITY

NRC/GT RESEARCH STUDIES

A Theory-Based Approach to Identification, Teaching, and Evaluation of the Gifted

Yale University

Robert J. Sternberg, Pamela R. Clinkenbeard

In the first year of The National Research Center on the Gifted and Talented, the staff at the Yale University site began a five-year study based on Sternberg's Triarchic Theory. Our study is investigating three major aspects of gifted education — identification, teaching, and student evaluation — in one integrated project. The Triarchic Theory involves three aspects of intellectual ability: analytic, synthetic-creative, and practical-contextual. We will be identifying high school students who are gifted in one of each of these areas (as well as those who are balanced among the three abilities, and a control group). Identification will be followed by instruction tailored to the various abilities. We will be teaching several sections of an exploratory psychology class with one section tailored to analytic abilities, another to creative abilities, and so on. Equal numbers of students with each kind of giftedness will receive each kind of instruction, and all students will be evaluated through all forms of assessment: analytic, creative, and practical achievements. We are interested in performance differences between students who are in a course section that "matches" their type of giftedness, and students who are in a course section that stresses an ability different from their own strength.

Our main task in Year 1 was to develop the curriculum materials which will be used throughout the five years of the project. Our objectives for the first year were: 1) to write and revise the text materials for the exploratory psychology course; 2) to write accompanying curriculum materials for each text unit; 3) to conduct field testing of the Sternberg Triarchic Abilities Test with gifted populations (especially underserved groups both with respect to kinds of giftedness and to demographic status); and 4) to begin planning for a 1992 summer pilot program.

With respect to our accomplishment of these objectives:

1) We have completed a full round of revision work on 13 content units for the exploratory psychology course. The units of text are entitled What is Psychology?, How Psychologists Think, Behavioral Neuroscience, Learning, Consciousness, Sensation, Perception, Memory, Language, Thinking, Intelligence, Cognitive Science, and Cognitive Development. The What is Psychology? unit presents psychology as a field of study and as a career. How Psychologists Think discusses some of the philosophical underpinnings of psychology and briefly presents methodological and statistical issues, as well as the problem solving process through which any scientist works. Behavioral Neuroscience describes the mind-body connection, including basic physiological psychology. Learning covers the history and current status of research on classical and instrumental (operant) conditioning. Consciousness deals with issues of identity, sleep and dreams, and altered states of consciousness. The Sensation unit discusses the five basic senses (including a section on pain research under the topic of Touch), and covers basic principles of sensation such as signal detection. The Perception unit covers theories of perception and various kinds of recognition and perception, including form and pattern, music, and reading. The Memory unit contrasts cognitive with more associationistic views of remembering and presents different theories of how information is processed and stored. Language presents information on the psychological and linguistic components of language, its relationship to thought, and cross-cultural differences in language. The Thinking unit presents inductive and deductive reasoning, problem solving and insight processes, and the development of the information-processing approach to research in the area. The Intelligence unit describes the history of intelligence theories and how they have evolved, and the relationship of intelligence to creativity. The Cognitive Science unit shows how psychology, computer science, anthropology, linguistics, and neuroscience are involved in the interdisciplinary study of cognition and mental models. Finally, the Cognitive Development unit integrates many of the other topics by discussing how perception, memory, and thought develop.

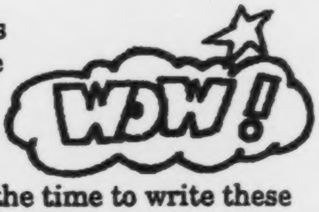
2) We completed a first draft version of the curriculum material which will differentiate the assignments related to these 13 units. This material, based partly on Renzulli's Enrichment Triad Model, includes Type I exploratory activities in analytic, creative, and practical domains; Type II group process-building activities in the three domains; and a Type III independent project. Further curriculum development will include differentiated in-class discussion questions and other suggestions for instructors.

3) With respect to development work on the Sternberg Triarchic Abilities Test, Yale site staff reviewed the current high school and college versions of the test, decided (a) what kinds of revisions were needed and (b) what type of data should be collected. The first revision of the STAT and preparation of a one-hour version suitable for screening for gifted students was partially contracted to Dr. Bonnie Nastasi, an Assistant Professor in school psychology at The University of Connecticut. She developed an experimental one-hour version of the STAT and gathered data on it from both gifted high school students and those not identified as gifted. Yale site staff gathered additional data from a variety of high school populations, and currently the STAT is undergoing further revision.

4) Finally, we met with Yale summer program staff and began negotiations for the services needed to produce our 1992 summer pilot program, where we will try out the identification process, the curriculum and the instructional procedure, and the assessment techniques with 40 to 50 high school students (the full-scale summer program in 1993 will involve 200 to 250 students).

We are pleased with our Year 1 results on this project, and at this point (December 1991) we are well into an exciting and informative Year 2.

Personal Note of Thanks



We are overwhelmed by the extremely large number of persons who responded to our request to write letters of support for the Javits Gifted and Talented Students Act. The favorable comments written in support of the NRC/GT will undoubtedly play a major role in continued funding for the Center. We extend our very sincere thanks to the many persons who took the time to write these very thoughtful letters to the Assistant Secretary. Everyone in the field owes you a debt of gratitude for your efforts.

Joe and Jean

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Parents: Their Impact on Gifted Adolescents

Julie L. Sherman, Niantic, CT

David is a bright, energetic, thirteen year old adolescent. He loves soccer, basketball, movies, concerts, pizza, and Burger King. He also has an intense interest in astronomy, can speak English, Spanish, and Russian fluently, enjoys reading material commonly found on college campuses, and has a lifelong dream of attending a prestigious Ivy League school to eventually become a lawyer. These remarkable accomplishments, abilities, and aspirations coupled with age appropriate pressures and interests have proved challenging for David. Although he appears to have the best of both worlds, David and his parents have been forced to deal with common questions, pressures and concerns associated with gifted adolescents.

While many parents are exceptionally interested in learning about their adolescent's special needs, they do not have ready access to the necessary resources. Parents are unaware of the impact they have upon their child's ability to deal with giftedness. Therefore, through interviewing David and his mom, Mrs. S., this article will provide parents with a better understanding of gifted adolescents, and the role parents play in their development.

Research conducted by prevalent theorists in the field of gifted education has all led to one major conclusion. One of the single most recurrent traits of productive gifted students is high motivation and persistence (Franks & Dolan, 1982: Dunn & Griggs, 1985: Renzulli, 1984, 1986). The main reason that some students become successful and some do not is differences in their motivation, due in large part to family values (Terman & Oden, 1959). Albert (1975) also stressed that a crucial trait of geniuses he studied was the compulsion to be productive, the ability to work hard.

In Bloom's (1985) study of talent development on concert pianists, sculptors, mathematicians, and neurologists, he found that all had in common some very clear messages provided by parents.

> ... [P]arents placed a great stress on achievement and at doing one's best at all times... They were models of the "work ethic" in that they were regarded as hard workers... To excel, to do one's best, to work hard, and to spend one's time constructively were emphasized over and over again.

Throughout David and his mother's interviews, the existence of the traits found in gifted research was evident. David's parental influences have proved critical in his development. His parents have been instrumental in guiding their gifted child both in and out of school. High achievement, positive attitudes, and constructive behavior are expected and reinforced by David's parents. Therefore, these traits have become internalized by David.

JLS: **David, what does it mean to be gifted?**
David: To me to be gifted is to be naturally intelligent. You must be strongly motivated, and you must have a curiosity to learn and to discover. You always will want to do your best and achieve the highest you possibly can.

JLS: **Are you gifted?**
David: In a sense, yes. Academically I am strongly motivated, and I always have a curiosity to learn and discover. I am naturally intelligent in a way.

JLS: **How did you find out that you are gifted?**
David: I never actually found out. In the earlier grades I recognized that I was always achieving grades other children were not achieving. My teachers always complimented me, and my parents were always telling me to do the best I could because I have a special gift. I have also always enjoyed reading books. I have continuously been told that I read books above my reading level.

JLS: **Above your reading level or the reading level of other children your age?**
David: Above the reading level of other children my age.

JLS: **Mrs. S., What does it mean to be gifted?**
Mrs. S.: It means a lot. There are many ways to be gifted. I do not think it can be measured by a test, or any one particular measure. I think the children who are labeled gifted have a variety of gifts. You can be gifted intellectually. You can be gifted athletically, artistically, or musically. You can be gifted in your creativity. I think there is a sense of creativity to be gifted.

JLS: **Is your son gifted?**
Mrs. S.: Being a teacher and a parent it is fair for me to say, yes, my son is academically gifted. He has a strong motivation to do well. Sometimes I think it is linked to an overachievement. He wants to do better, therefore, he strives to try harder. But it comes very easily to him so there is not the presence of frustration other children might find.

JLS: **How did you find out your son is gifted?**
Mrs. S.: My husband and I have never had him tested as to whether or not he is gifted. It has never been important enough to either of us for him to have the label. My goal is to have all my children do the very best they can do. My husband and I are strong motivators. We provide many opportunities for him to express his giftedness, trips to the library, home projects, family travel. We believe in encouraging our children to do their best. If you are or are not labeled gifted is not important. What is important is to utilize what you were given, and that you do not waste any abilities.

JLS: **David, what have your parents said to you about being gifted?**
David: My parents have always encouraged me to do the best that I can. They continuously say not to waste what I have, my brain. My parents are very proud of me and are happy with my accomplishments.

JLS: **What do your parents do to get you interested in new things?**
David: My parents always encourage me. They show me the advantages of new things. If they want me to take karate lessons, they show me the advantages of knowing. Or if they want me to take an extra hard class like algebra, calculus, or they'll show me the advantages of being knowledgeable in that particular area.

JLS: **Mrs. S., What have you told your son about being gifted?**
Mrs. S.: It is not important if you are labelled gifted or not labelled. Although it is important to some people, I feel the important factor is making the most out of your abilities.

JLS: **Does your child have any questions or concerns about being gifted?**
Mrs. S.: Yes, he often asks why he is not labelled gifted while some of his friends are. He feels he performs equally to or better than these students.

JLS: **What do you do to get your son interested in new things?**
Mrs. S.: Getting David motivated to do new things is not easy. You can't just make a suggestion. You have to come up with reasons. You have to have explanations, demonstrations. He likes what he knows he can succeed at. Sometime it is very difficult to get him to try new things because of his desire not to fail.

Although many gifted students are typically risk-takers, this does not appear true in David's scenario. His parents must struggle to get David involved in new subjects areas. However, he loves astronomy and languages. In these two subject areas he becomes totally immersed in his ideas and creations, literally unable to rest until his work is complete. His mom often finds him in his room for hours writing poetry in Spanish or studying the possibility of life forms on other planets.

Why then is David reluctant to try new things? One explanation may be David's tendency to set high goals for himself. Even when involved in a new undertaking, he wants to succeed. If he does not, the natural outcome is disappointment, frustration, and feeling of incompetence. Parents are often baffled by displays of frustration and self-criticism by adolescents who are usually extraordinarily capable and talented. The frustration occurs not because the individual is comparing himself to others, but with his own high expectations. Parents must then reinforce the adolescent's attempts, demonstrate positive attitudes, and help him to use failure constructively.

Like many gifted adolescents, David is motivated to succeed. He feels responsible for his successes and failures, but he is in control of his destiny. Because of parental support, he is often able to attribute failure to lack of effort, not to lack of ability. A failure is viewed as a momentary setback that motivates him to try harder next time. A failure is a learning experience.

See page 10

Academic Summer Camp: An Opportunity for Gifted Minority Students

Commentary

Richard Chandler,
Mathematics and Science Summer Institute, Arlington, TX

What if you were able to take exactly 100 identified gifted-minority high school students from Harlem, New York to central Long Island for a three-week camp-out during the summer vacation period? What if you were able to provide three university professors to teach courses in science, mathematics and computer science? Finally, what if you were able to bring together thirty high school teachers to serve as supervisors and mentors for these academically gifted students? Would it make a difference??

These questions frame the outline for a program that attempts to establish a viable alternative for disadvantaged minority students from Harlem, New York that have been identified as potentially gifted but are not performing up to their academic potential. These students are found to be at a crossroad in their lives and must make a serious decision concerning their academic future that will most certainly influence the rest of their lives. The primary goal of the summer program is to remove these students from a hostile damaging environment and place them in a rural-academic setting where they will be able to review their situation and make some informed decisions.

In 1985 the germ of an idea to establish an academic summer camp for disadvantaged-gifted minority students was born! This initial program was designed to identify 100 gifted-secondary students from Harlem, New York and provide them with a three-week academic camp held at the Southampton Campus of Long Island University. Three university professors were hired to teach a three-week short course in Physical Science, Advanced Mathematics and Computer Applications. Thirty secondary teachers were also selected to receive a small subsistence allowance, to live and work with these students. Most of these functional components and activities were eventually funded by private foundations and/or private companies. The National Science Foundation (NSF) was able to fund the teacher participation for the initial three years of this summer program.

Because of the vast scope and many imponderable variables, attempts at establishing any type of statistical-research model have been unsuccessful.

Please see page 11

Parents *From page 9*

JLS: What happens when you make a mistake?
David: I really beat myself up. I hate when I make a stupid mistake. Even if it is not a stupid mistake, I get upset because I know I could have done better. Sometimes when I make a mistake I am embarrassed. I know that I should have tried harder.

With parental support David is able to deal with failures constructively. He is becoming more of a risk-taker. However, as he enters adolescence he is beginning to feel the effects of peer pressure. During adolescence, peer pressures become strongest and most influential. Gifted adolescents may succumb to the peer mandate that studying is not "cool". Positive family relationships help alleviate the tendency for gifted adolescents to underachieve. David's parents have supported his talents and have helped him confront peer pressures. They have pointed out the importance of achievement for future success. David's excellence in sports and his ability to play down academic talents have also been instrumental in eliminating some of the stereotypes associated with giftedness.

JLS: How are you the same as other children your age?
David: I am a lot like other children my age because I like to hang around with my friends. I like sports. I argue with my sister.

JLS: How are you different than other children your age?
David: I have a very strong desire to do the best I can and get a "100" or an "A" on everything that I possibly can. I always want to do well. If I get a poor grade, I carry that through the whole day, sometimes longer. Other kids just forget about it.

JLS: How do you feel about being smarter than some of your friends?
David: Sometimes it is embarrassing because my friends get mad at me if they don't get a good grade and I do. They get jealous. It is a very uncomfortable situation.

JLS: Did you ever try to do poorly so that other children would like you more?
David: No, I would never do that. I would always be mad at myself. I try to do the best I can.

JLS: Did you ever try to hide the fact that you are intelligent?
David: Yes, it is sometimes embarrassing. Other kids will look at me and be disgusted if they get a "B", which is not bad, and I get a "100". They will look at me with a type of distaste. I get embarrassed.

Despite some uncomfortable peer interactions, David has continued to strive for his goals and dreams. This is due, in large part, to parental role models. David's parents have encouraged him to excel. They support his efforts to work hard at all times. They believe he can and should work to attain the goals he has set for himself.

JLS: What do you want for your son in the future?
Mrs. S.: In the future, I want my son to be everything he wants to be. I don't want him to be frustrated in what he does, but I also want him to work hard and to have strong goals for himself and his future.

JLS: David, what would you like to learn about someday?
David: I've always wanted to learn lots of languages. I'm taking Spanish and Russian. I would like to take more. I enjoy languages. I have an interest in astronomy. I wonder, is there life on other planets?

JLS: What are your plans for the future?
David: In the near future I plan to go to high school and take another language, then go to college.

JLS: Have you thought about what college you would like to attend?
David: It's kind of a dream of mine, but I have always wanted to go to Harvard or Yale, maybe another very good Ivy League school. I want it to be a school that I can be proud of.

JLS: Where do you see yourself after college?
David: Lots of my friends continuously change their minds about future career plans. Not me. I am going to be a lawyer.

JLS: Why a lawyer?
David: Well, a lawyer uses his abilities to organize, reason, and think in order to help people. I think I would enjoy the hard work and dedication that is involved in becoming an outstanding lawyer.

David is obviously motivated. This motivation, persistence, and compulsion to be productive have been influenced by parental values. David has internalized many of his parents traits of high achievement, positive attitudes, and constructive behavior. Although he faces some concerns and pressures from himself and peers, he is able to overcome these adversities and aspire to his goals and dreams. In order for other gifted adolescents to succeed, parents must realize the significant role they play in their child's development, and the impact they have on their child's future success.

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Seeing is Believing!

What Every Administrator and Policy Maker Needs to Know About the Research on Ability Grouping

G 1
IF 2
TED 3
TALE 4
NTED 5
AMERICA'S 6
FUTURE 7

Will the elimination of grouping cause our nation to lose its vision about the future? More than 60 years of research on the effects of ability grouping has resulted in what one school administrator called "a wilderness of mirrors" about this controversial and politically loaded topic. Now, for the first time, one of the nation's leading research analysts has produced what one reviewer called the most objective review to date on grouping research.

- *How have new methods of analyses enabled us to look at the research more objectively?*
- *How does political correctness influence the ways in which research is interpreted?*
- *What are the most defensible decisions about grouping that are supported by the research?*

Find the answers to these and other critical questions about ability grouping by writing for a copy of James Kulik's new paper. Advocates of programs for the gifted and talented will want to share this paper with administrators and policy makers who are using the research on ability grouping to question the value of special programs.

An Analysis of the Research on Ability Grouping: Historical and Contemporary Perspectives

By Dr. James A. Kulik
The University of Michigan

Order No. 9203–
Executive Summary of Dr. Kulik's Paper (7 pages)............ $2.00

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Full Length Paper (approximately 50 pages and includes Executive Summary)... $15.00

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Academic Summer Camp *From page 10*

My purpose here is to provide a subjective description of this program for review, consideration and further discussion. The cost of this program demands a significant statistical assessment model, but I believe, intuitively, that this effort will provide generous benefits to our growing minority student population.

In 1985 the New York City Board of Education was frustrated by the obvious fact that many potentially gifted minority students at the secondary level were performing far below their potential and were unable to gain access to the "better" academic high schools. It was suggested that the Board of Education provide a series of special academic programs for these students. Several programs were proposed but each had major draw-backs that made them unacceptable. Our program proposed an intensive academic program in science and mathematics, to be held during the summer vacation period. These initial parameters proved acceptable to the Board and after several years of refinements and false starts the project was funded.

During the summer of 1989, the initial program was started. The first step was to identify middle school minority students that were known to be gifted academically but were performing below expectations. These students and their parents were interviewed by school personnel and the camp administrators. The primary consideration was that the students wanted to improve academically and their parents were supportive of their involvement in an academic summer camp.

We wanted the summer camp to be an extraordinary environment that would affect an attitudinal change in each student. The focus of all students, teachers and staff was to be upon academics in a clean, secure and healthy atmosphere that would be conducive to learning. The hope was to nurture young minds and develop a love for learning.

Daily Routine for Students

First thing in the morning was a good breakfast. This event proved to be a new experience for a large majority of the students. After breakfast, the students went through a sequence of three concurrent academic classes - 33 of the students attended mathematics during the first hour. Next they went to an hour of computer science and the final hour was for physical science. Each course was designed to challenge the student to seek more information in the subject area. Lunch was scheduled for two hours to provide time to eat and for a period of rest and free time. After the lunch period, a special course on SAT preparation was provided in the areas of language and mathematics. Immediately after this course, the students were provided a "mandatory" period of athletics. Soccer, tennis, swimming, volleyball, touch football and basketball were offered to all students. Dinner was scheduled next and a block of two hours was again provided for the students to eat and take care of personal needs. From approximately 7:00pm until 10:00pm, teachers provided individual help for a small group of students. At various times, students met with a special guest lecturer such as Sheldon Glashow, the Nobel prize winning physicist from Harvard University. On some week days, students visited Brookhaven National Laboratory or Cold Harbor Springs Research Facility. Two Sundays were set aside for family visits, athletics and other activities. On Friday and Saturday evenings, we had dances and other social opportunities. One Saturday we had a Mathematics Olympiad and on another Saturday we had a Physics Olympiad. During subsequent years, we were able to invite foreign students from France, Switzerland, Africa and Russia. These foreign students added immeasurably to our program.

Subjective Outcomes Viewed from Inside

The first few days that the students were at the camp were chaotic to say the least. There were several fights. Students "cut" classes and refused to participate fully in the activities. On the fourth day, the kind but firm hand of the teachers and a large degree of peer pressure began to provide the kind of atmosphere that we had hoped for! All students attended classes, participated in athletics and participated fully in the evening programs. Parent visits were met with amazement and delight at the progress their son or daughter was making in academics. During the last week of the camp, the teachers began to be truly challenged by the students and felt a genuine sense of accomplishment. The SAT program saw a jump of from 200 to 300 points on students' comprehensive scores. The closing ceremonies were punctuated with tears and laughter of joy. The Board of Education was to follow-up on these students, but no record of any type was ever kept. There is a general feeling that these students that attended this program were eventually successful and did go on to "better" high schools. But, the real proof as to the value of this program must lie in the long term effect on these students in college and in later life.

JUST OFF THE PRESS

Six Thinking Hats for Schools by Edward de Bono

Do you know about the Six Thinking Hats method developed by Edward de Bono? If not, you must see a copy of the *Six Thinking Hats for Schools* (series of Teacher Resource Books for Grades K-2, 3-5, 6-8, 9-12). You have probably told your students at one time or another to "put on their thinking hats" as a way to get their attention to think hard. This phrase takes on a whole new meaning when you teach the thinking hats method.

In the introductory chapters of the book, the meaning for each thinking mode, signified by a different colored hat, is explained and accompanied by several illustrations for practice. Teachers and students learn to associate the colored hats with key words and questions. This directs, redirects, and sequences their thinking.

Sample key words and associated questions follow.

White Hat:	Information What are the facts?	Yellow Hat:	Benefits What are the good points?
Red Hat:	Feelings What do I feel about this?	Blue Hat:	Thinking What thinking is needed?
Black Hat:	Judgment What is wrong with this?	Green Hat:	Creativity What new ideas are possible?

Some sample student activities to introduce the six thinking hats include the following:

> Put On Your Yellow Hat
>
> A local grocery store has decided to sell only products that are better for the environment - like recycled paper items, vegetables grown without pesticides, and household cleaners that don't pollute. Who will benefit? What are the benefits? (page 54)
>
> Put On Your White Hat
>
> Arriving home from school, you find that the door is locked and no one answers. Someone is usually at home at this time of day. What information do you need, and what are your sources for the information? (p. 70)
>
> Put On Your Green Hat
>
> There has been an outbreak of car thefts in your neighborhood. What are some creative ways to stop the thieves? (p. 85)

The *Six Thinking Hats for Schools* is so well designed that teachers will feel comfortable implementing the lessons after reading about the thinking hats concept and experimenting with the practice activities. All lessons are organized with background notes, guidelines for discussions, reproducible activities, and discussion notes. Students learn about the thinking modes using a lesson format that includes: lead-in, explanation, demonstration, practice, and elaboration. The lesson format is a simple, but effective, paradigm that can be used to create new lessons that expand the curriculum. In fact, Edward de Bono illustrates just how this was done in the final section of the book on sample applications. Model lessons developed by classroom teachers focus on the typical content areas of language arts, social studies, science, math, art, and music. But, of course, with de Bono's work he always goes beyond what is expected. Two additional areas are conflict resolution and conflict avoidance.

Teachers and students will certainly enjoy Edward de Bono's *Six Thinking Hats for Schools* which is available from Perfection Learning, 10520 New York Avenue, Des Moines, Iowa. 50322.

Reviewed by E. Jean Gubbins
The University of Connecticut

Now Available from CPRE: Two New Reports on Teacher Empowerment

CPRE (Consortium For Policy Research in Education) Rutgers University

The following reports are available from: Publications Department, CPRE, Eagleton Institute of Politics, Rutgers University, New Brunswick, NJ 08901. Prices include handling and book rate postage. For information call (908)828-3872.

Building School Capacity for Effective Teacher Empowerment: Applications to Elementary Schools With At-Risk Students by Henry M. Levin ($10)

The term "teacher empowerment" may already be fading from use, in large measure because of its vagueness. Does it mean giving teachers authority over school-level and/or classroom decisions? Does it involve mainly issues of governance? Does it focus mainly on classroom effectiveness and enhancement of teachers' knowledge of content and instructional strategies?

Levin argues that decentralizing decision-making and increasing school staff-participation in running schools are necessary elements of teacher empowerment. But they are not enough. Capacity-building at the school and district level is required to make teacher empowerment "more than a tantalizing slogan," says the author.

Drawing on his experience in developing accelerated schools for at-risk students in five states, Levin discusses features of school-based decision-making that could be the focus of a capacity-building effort. The paper addresses topics such as leadership, technical assistance, and accountability.

Teacher Empowerment and Professional Knowledge by Gary Lichtenstein, Milbrey McLaughlin and Jennifer Knudsen ($7)

This paper presents a view of teacher empowerment which includes professional knowledge as a crucial aspect. The authors also propose a new definition of "professional knowledge" for teachers, one that goes beyond staff development efforts and other commonly proposed strategies to enhance teacher knowledge.

After a year of field study and literature review of structural, formal, and institution-based efforts to empower teachers, the authors found that decentralization or enhanced teacher authority did not necessarily lead to teacher empowerment. The authors then shifted their research to look at knowledge-based reforms.

Through this approach, the authors discovered teachers who believe they are empowered in principle and practice, whose attitudes about teaching are upbeat, hopeful, and even enthusiastic. These teachers believe their practice represents a model or professionalism that ought to be widely developed.

JUST OFF THE PRESS

Have You Been Reading *The Creativity Research Journal*?

Mark A. Runco, California State University, Fullerton

Educators and individuals interested in gifted and talented children will enjoy the first 1992 issue of the Creativity Research Journal (vol. 5). It is devoted to "Play, Imagination, and Vygotsky's Theory," and contains articles by Brian Sutton-Smith, A. Pellegrini, Janet Sawyers, Olivia Saracho, Francince Smolucha, Saba Ayman-Nolley, and Vera John-Steiner.

Other CRJ articles are also relevant to the study of gifted and talented students, including "Family adaptability, cohesion, and creativity" (John Moran, vol. 3); "Social influences on creativity" (Theresa Amabile, vol. 3); "Development of creative skills: A must for science education" (Yager, vol. 2); "Teacher's creativity, playfulness, and style of interaction with children" (Janet Sawyers, vol. 2); On the development of creativity in children" (Urban, vol. 4); "Maternal teaching techniques and preschoolers' ideational fluency" (Goble et al., vol. 4); and "Mother-child relationships and creativity" (Stephanie Dudek, vol. 4).

The Editor welcomes articles specifically on the creativity of gifted and talented children. Write to Mark A. Runco, CRJ Editor, EC 105, California State University, Fullerton, CA 92634. (Email: Runco@Fullerton.edu) (Fax: 714-773-3314)

The CRJ is published four times each year by Ablex Pub. Corp., 355 Chestnut St., Norwood, NJ 07638 (Tele: 201-767-8450)

Ablex has also recently published:
Roberta Milgram's Counseling Gifted and Talented Children;
Arthur Cropley's More Ways Than One: Fostering Creativity in the Classroom; and
John Wakefield's Creative Thinking: Problem Solving Skills and the Arts Orientation.

Several volumes are expected in 1992, including Rena Subotnik's *Genius Revisited: High IQ Children Grown Up and Beyond Terman: Longitudinal Studies in Contemporary Gifted Education.*

CAN COOPERATIVE LEARNING BE ADAPTED TO BENEFIT GIFTED STUDENTS?

The current controversy on ability grouping and cooperative learning has endangered or eliminated many programs for gifted and talented students. Yet, research on cooperative learning's effect on gifted students has been inadequate and superficial.

Program modifications may have to be made to enable gifted students to benefit from cooperative learning. Advocates and decision makers must be able to address questions based on an analysis of the research evidence.

- ***What weaknesses exist in the cooperative learning research base?***
- ***What risks exist for gifted students who participate in cooperative learning?***
- ***How can cooperative learning be implemented for gifted and talented students?***
- ***Should cooperative learning ever be used as a substitute for programs for the gifted?***

Find the answers to these questions in

Cooperative Learning and the Academically Talented Student

by Dr. Ann Robinson - University of Arkansas at Little Rock

Order No. 9105– Executive Summary (available soon)..... $2.00
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RESEARCH IN PROGRESS

How the Structure of the Intellect Tests and Curriculum Identify, Develop, and Maintain Giftedness

Mary Meeker, SOI Systems, Vida, Oregon

Decades ago Dr. Joy P. Guilford created a theory of multiple intelligences represented graphically by a three-dimensional cube. This model of intelligence, known as the Structure of the Intellect (SOI), initially included 120 cells along three dimensions: Content - figural, symbolic, semantic, and behavioral; Product - units, classes, relations, systems, transformations, and implications; Operation - evaluation, convergent production, divergent production, memory, and cognition. The theoretical model eventually expanded to include 180 cells. Research by Meeker and others extended the use of the Structure of the Intellect and the accompanying learning abilities tests as a diagnostic-prescriptive approach to the teaching of thinking skills. Summaries of research studies focusing on special populations using the SOI curriculum 30 minutes a day, three times a week are highlighted.

Longitudinal studies of Native Americans (1977-1981)

Compiling and documenting patterns of abilities from various studies in which Navajo, Shoshone, Comanche, Nez Pince and Canadian Indians (west and eastern coastal) were identified as gifted, showed that there were remarkably similar patterns of intellectual abilities among the groups. Strength areas included figural-spatial abilities, visual memory for details, auditory memory, and symbolic abilities. Areas that needed further development were: convergent production, vocabulary, verbal relations, verbal systems, and classification abilities.

Knowledge about these abilities, when used as a basis for meeting individual needs of Native Americans, has resulted in increased motivation to stay in school, to improve grades and achievement and eventually to seek college admittance.

Longitudinal studies of Hispanic Americans (1975 to the present)

Various age groups of Hispanic students in California, New Mexico, Texas, and Florida, from children to engineering students at technological universities in Mexico, have been and still are being studied. As a group, they initially showed high ability in creativity and symbolics. Classification and semantic abilities needed to be encouraged.

After programming was done to match curriculum to their strengths and weaknesses, several changes occurred. First, the parents began to feel a part of the community and far fewer families moved frequently. Secondly, intellectual growth in the younger students was slow, but steady. If the program was sustained over two years, there was rapid improvement in achievement. Even at middle school and high school, grades improved and there was a desire to remain in school until graduation.

Longitudinal studies of African Americans

Boys with patterns of high auditory memory, but low visual memory, will do much better in arithmetic and mathematics than in the language arts where visual memory is required. Low visual memory, in combination with low semantic abilities, almost guarantees failure in subjects requiring reading in school. The obvious solution, of course, was to include daily intellectual abilities lessons in the primary grades that developed visual memory, vocabulary, verbal relations and verbal sequencing. In schools where this change took place, school failure was significantly reduced.

Strength areas of African American students included auditory memory, figural and motor abilities with visual memory and semantic memory requiring more attention. For example, highly skilled college football athletes who showed long standing low semantic abilities, even with advanced auditory memory and spatial abilities. After a year of daily SOI training, their semantic abilities improved enough for them to make qualifying scores on the SAT (Michelles, Tulane University), thus allowing them to play collegiate ball.

Studies of students who are deaf or hearing impaired

As early as 1979, educators of the deaf, dissatisfied with consistent below average IQ test scores on students with hearing impairments, designed studies to identify specific intellectual strengths. They were, of course, searching as well for potentially gifted students. The first report showed students with hearing impairments had differential intellectual developmental growth expectancies in SOI abilities. There was a three year deficiency in most abilities except for figural classifications which crossed both gender and three grades, suggesting that the initial learning process for storing information was a classifications strategy. In other words, each new item was comprehended and stored on its basis for being similar to something already known.

When we average all SOI tests, we find that even though there was a three year over all delay in progress for students who are deaf or have hearing impairments, they nevertheless made, as a group, scores in the gifted range in visual memory, systems thinking, and figural classifications.

Studies using the Structure of Intellect learning abilities tests and curriculum have confirmed the importance of diagnosing students' strengths and weaknesses in cognition, memory, convergent production, divergent production, and evaluation. The diagnosis of skills leads to a prescriptive approach using curriculum to teach the abilities that are low, maintain the abilities that are high, and develop other abilities.

Family Personality and the Creative Potential of Exceptionally Gifted Boys *Abstract*

Robert S. Albert, Pitzer College
Mark A. Runco, California State University, Fullerton

The California Psychological Inventory (CPI) was administered to two samples of adolescents (N=54) and their parents as part of an on-going longitudinal investigation of exceptional giftedness. The adolescents were selected based on either IQ (all in excess of 150) or math-science abilities (e.g., age 11 SAT-Mathematics scores at the 99th percentile). CPI profiles indicated that both groups of adolescents had low scores on the Well-Being scale, and there was some indication across several scales of low sociability. While the parents' profiles were relatively uniform, there were significant differences in intrafamily similarity, with the High IQ families being more similar than the Math-Science families. Finally, correlational analyses indicated that several scales from the CPI were associated with creativity scores of the adolescent boys.

Effects of Radical Acceleration on Educational and Career Attainment of Young Women and Men *Abstract*

Kathleen Noble, University of Washington

The Early Entrance Program (EEP) at the University of Washington has been in operation since 1977, enabling 15 students each year, maximum age 14, to enter the UW without attending high school. Studies to date indicate that the majority of these students perform extremely well academically, and become well integrated into the University community. However we do not know what effect participation in the EEP will have on students' subsequent personal and professional adult lives, nor whether any gender differences will exist in these effects. This study begins the accrual of a data base to provide current answers to a number of critical questions about the radical educational acceleration of gifted, qualified adolescents.

RESEARCH IN PROGRESS

Problem Finding Skills As Components in the Creative Process *Abstract*

Ivonne Chand, Mark A. Runco
California State University, Fullerton

The present investigation compared the effects of explicit and standard instructions on six tests of divergent thinking. Two of these tests assessed real world divergent thinking; two tests assessed real world problem generation; and the last two assessed a combination of problem generation and divergent thinking (i.e., examinees chose one of the problems they had themselves identified, and then generated ideas and solutions). Importantly, all tasks focused on problems occurring in the natural environment. In particular, examinees (80 college students) were asked to give solutions for problems concerning both work and school situations. The results revealed significant differences among the different tests and differences between the explicit and standard instructional groups. Importantly, only the scores elicited by explicit instructions were significantly correlated with— and predictive of— creative activities and accomplishments. Implications for future research are discussed.

Resilient Youth: Case Studies of Disadvantaged Gifted Adolescents *Abstract*

Ann Robinson, University of Arkansas at Little Rock

Against the odds of economic, social, and educational disadvantage some remarkable youth develop as talented individuals capable of high-level performance. A qualitative study of economically disadvantaged youths who attended the 1988 Arkansas Governor's School is underway at the University of Arkansas at Little Rock. Over a period of two years, four youths have been followed through high school graduation and the first year of college. The study attempts to document the effects of the residential governor's school on economically disadvantaged youth. Students' social relationships, post secondary aspirations, and epistemological beliefs are under investigation: Werner's concept of resiliency, which is defined as successful adaptation to stressful life experience, is the framework used to describe and account for the development of high-level performance among gifted youth from impoverished homes.

The investigators are interested in establishing contacts with other researchers currently investigating economically disadvantaged gifted youth. Please write:

Dr. Ann Robinson & Ms. Margaret Leigh
Center for Research on Teaching & Learning
University of Arkansas at Little Rock
2801 South University
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A *Low Cost* Professional Development Opportunity for All Teachers

Curriculum Compacting: A Process for Modifying Curriculum for High Ability Students
By
Dr. Sally M. Reis
The University of Connecticut

- ***Why are so many above average ability students unchallenged in school?***
- ***How can teachers overcome the effects of "dumbed down" textbooks?***
- ***What can be done to increase the challenge level of standard curricular material?***
- ***What does research tell us about the effectiveness of curriculum compacting?***

Learn the step-by-step compacting process and find answers to the above questions by tuning in to a national staff development training program. This is an unusual opportunity for advocates of special programs for gifted students to initiate a low cost training program for all teachers in your district.

The program will include:
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Stage, Structure, and Complexity in the Drawings of Middle Childhood: A Developmental Model of Artistic Ability **Abstract**

Marion Porath, University of British Columbia

The period of middle childhood (children aged 4, 6, 8, and 10) is the focus of this study which seeks to define the characteristics of artistic ability within a model of giftedness. The model combines neo-Piagetian stage theory (Case, 1985), a perspective which identifies formally parallel, age-related characteristics of children's cognition across a variety of domains and modular views of exceptionality. These views argue for advanced development in the area of giftedness (Feldman, 1986; Gardner, 1983).

Each child in the sample (N=217) completed five drawing tasks. The tasks were designed to reflect increasingly complex demands in organizing the elements of the drawing according to rules of perspective. The young gifted artists in the sample have been found to be age-typical in their ability to render perspective. Their drawings, however, are characterized by advanced development in specific artistic skills such as understanding of composition and colour and sophisticated graphic ability. Formal analyses of these elements are now underway.

Educational applications will include guidelines for identification of young gifted artists and for the nature and appropriateness of instruction at different stages of development.

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The National Research Center on the
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Newsletter
Fall 1992

The University of Connecticut • The University of Georgia • The University of Virginia • Yale University

NRC/GT Destination: So Near and So Far

by **E. Jean Gubbins**
The University of Connecticut
Storrs, CT

The National Research Center on the Gifted and Talented is now in its third year of operation. It is hard to believe that we are on the "crest" of the five-year research grant to conduct theory-driven studies with practical applications. In the spring of 1991, Joe Renzulli, Director of the NRC/GT, wrote an article for *Gifted Child Quarterly* entitled "The National Research Center on the Gifted and Talented: The Dream, the Design, and the Destination." I can still recall the day he was working on the article. He called out over the transom in our old office asking for a 'd' word to round out the title. Destination was it! Well, we are beginning to realize our destination. In June of 1990, we initiated seven large scale research studies. Since our national needs assessment, we have designed twelve more. A consortium of four universities and a network of thousands of teachers, administrators, parents, and students are making it possible to carry-out nineteen research studies.

We are now in the process of finalizing the technical reports for several year long studies at The University of Connecticut. The initial results were highlighted in the March 1992 *NRC/GT Newsletter*. We will let you know when the technical reports for the following studies will be available to the public:

National Needs Assessment Study
Joseph S. Renzulli
Brian D. Reid
E. Jean Gubbins

Curriculum Compacting Study
Sally M. Reis

Classroom Practices Survey
Francis X. Archambault

Classroom Practices Observation Study
Karen L. Westberg

All the NRC/GT researchers are involved in implementing new studies for 1992-93 which are based on the results of the national needs assessment. The research will focus on the high school experiences of bright students in urban environments, successful classroom practices with an emphasis on teaching thinking skills, program performance of students identified using alternative criteria, staff development, preservice teacher preparation, and social and emotional adjustment of gifted students. The timeline for each study varies from one year to three years. As the research evidence accumulates, we will share it with you. Abstracts of the new studies and the continuation studies are highlighted in this newsletter.

While the research studies are being conducted by The University of Connecticut, University of Georgia, University of Virginia, and Yale University, we have been working with several Content Area Consultant Bank

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members on our Research-Based Decision Making Series. Five monographs have been published and others are being reviewed. The following research summary points from the series may be of interest to you:

> **Gifted and talented students should be given experiences involving a variety of appropriate acceleration-based options.**
>
> *Grouping Practices*
> Karen B. Rogers

> **Bright, average, and slow youngsters profit from grouping programs that adjust the curriculum to the aptitude levels of the groups. Schools should try to use ability grouping in this way.**
>
> *Ability Grouping*
> James A. Kulik

> **If a school is committed to cooperative learning, student achievement disparities within the group should not be too severe.**
>
> *Cooperative Learning*
> Ann Robinson

> **Some indirect evidence exists that labeling a child gifted would have a positive impact on self-esteem, but direct evidence is lacking.**
>
> *Self-Concept*
> Robert D. Hoge &
> Joseph S. Renzulli

> **Identification of artistically gifted and talented students should be based upon attention to student potential and work in progress, as well as final performance and products.**
>
> *Identification in the Arts*
> Gilbert Clark &
> Enid Zimmerman

Thousands of copies of these monographs have been disseminated to people. We are also very fortunate that several newsletters have reprinted the executive summaries for their own subscribers, which furthers our ability to "get the word out." One newsletter reprinted the executive summary on *Grouping Practices* by Karen Rogers and sent it to 15,000 people!

Moving toward our destination would definitely not be possible without our Collaborative School Districts (CSD) and the cooperation of the state and territorial departments of education consultants. Our CSD network has reached 305 districts throughout the country.

Working with Collaborative School Districts and state and territorial departments of education consultants provides a "reality check" for all of our research. Research can be complex and mystifying at times; it can also be demystified. We are asking the questions that practitioners wanted answered and moving ahead with our research agenda. Look for the highlights of research studies conducted in 1991-92 in our next newsletter.

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Year THREE Research Abstracts

THE NATIONAL RESEARCH CENTER ON THE GIFTED AND TALENTED

ABSTRACTS OF YEAR 3 RESEARCH STUDIES

An Ethnographic Description of the High School Experiences of High Ability Students in an Urban Environment

Principal Investigators: *Dr. Sally M. Reis*
Thomas P. Hébert
Implementation: 1992-1994

Gifted students from culturally diverse populations exist in large economically deprived urban environments, and they are now being included in the statistical reports of high school dropouts. To deal with this crisis situation, educators must better address their needs through appropriate educational programs. For this reason, students from economically disadvantaged backgrounds were identified as a priority in the Jacob Javits Act, and this research is the first ethnographic study proposed by The National Research Center on the Gifted and Talented (NRC/GT) to address this problem. The study will examine the cultural reality of high ability teenagers in an urban environment through participant observation and ethnographic interviews. The objective of the research will be an attempt to identify the following: cognitive and affective educational needs of gifted youth who are achieving and underachieving in an urban high school setting, the strategies for success employed by these students, and the educational and psychological support systems available to this population.

A Longitudinal Study of Successful Practices in Regular Classrooms

Principal Investigators: *Dr. Francis X. Archambault, Jr.*
Dr. Karen L. Westberg
Implementation: 1992-1995

The University of Connecticut site of the NRC/GT intends to conduct research during the next three years which will examine the impact of a comprehensive educational program for high ability students in the regular classroom. In an experimental study, an educational program will be implemented in two treatment schools and a control group school in a school district with a high concentration of economically disadvantaged students. In addition to collecting quantitative data to assess the program's impact on teachers and students, qualitative research techniques will be employed to provide rich descriptions of the various aspects of the educational plan. During Year 1, the treatment interventions and assessment instruments will be developed and field tested, and staff development experiences will be provided to teachers in the treatment schools. The educational program, to be implemented during Years 2 and 3, will include instruction in basic and complex thinking skills and instruction and opportunities for application of thinking skills to both advanced content and advanced project work. The need for these components of the educational intervention, as well as the nature of each component, emerged from the studies undertaken during the first two years of the NRC/GT at The University of Connecticut as well as from a review of recommended practices for high ability students.

Gifted Program Performance of Students Identified Through the Research-Based Assessment Plan

Principal Investigators: *Dr. Mary M. Frasier*
Dr. Scott Hunsaker
Implementation: 1992-1993

This study will provide information that will help educators make the critical connection between assessment data and programming/curricular decisions. By investigating the gifted program performance of pilot study students identified using the Research-Based Assessment Plan (and comparing their performance with that of traditionally identified students), the study will help validate a theory based on the differential manifestations of gifted behaviors in different students and translate that theory into best-practice recommendations regarding program planning for these students. Both qualitative and quantitative data will be analyzed in order to evaluate achievement and attitudinal variables.

A National Field Test of the Staff Development Model and the Research-Based Assessment Plan

Principal Investigators: *Dr. Mary M. Frasier*
Dr. Scott Hunsaker

Implementation: 1992-1993

This field test will investigate the transferability of the Staff Development Model and the Research-Based Assessment Plan developed in 1991-1992. Selected sites that reflect various types of communities (i.e., suburban, urban, rural) will implement the Staff Development Model and the Research-Based Assessment Plan with technical assistance but without direct supervision from personnel at The University of Georgia. These sites will reflect differences in designs such as: administrative organization, school sizes and type, differences in minority/majority population ratios, gifted program delivery models, school location, and personnel resources. However, sites will be selected that have similar philosophies and program goals. Data collected will be used to determine: (a) the degree to which the Staff Development Model can be transferred, (b) the degree to which the Research-Based Assessment Plan can be transferred, and (c) the extent to which the Staff Development Model and the Research-Based Assessment Plan change the attitudes of students, teachers, and administrators toward the participation of target population students in gifted programs.

Investigations into Instruments and Designs Used in the Identification of Gifted Students and the Evaluation of Gifted Programs

Principal Investigator: *Dr. Carolyn M. Callahan*

Implementation: 1990-1993

The University of Virginia has established a National Repository for Instruments and Strategies used in the Identification of Gifted Students and the Evaluation of Gifted Programs. Existing instruments, systems and designs used in identification and evaluation were collected through a nationwide survey. In addition, a paradigm was created for evaluating the identification instruments in light of the wide variety of definitions and conceptions of giftedness. Non-traditional and product/performance instruments currently in use in evaluation of gifted programs will also be reviewed for their usefulness. Potentially useful locally-developed instruments will be examined through formal validation processes.

Pre-Service Teacher Preparation in Meeting the Needs of the Gifted

Principal Investigators: *Dr. Carol A. Tomlinson*
Dr. Carolyn M. Callahan

Implementation: 1992-1995

There is evidence of a need to improve teacher attitudes and practices regarding instruction of gifted learners and evidence that positive changes in teacher attitude and practice can be accomplished through interventions with pre-service teachers. This study will examine the impact on pre-service teachers' attitudes and practices of direct instruction regarding gifted learners, their needs, and strategies which exist for meeting those needs. In addition, one group of pre-service teachers in the study will also receive coaching in instructional differentiation by trained educators of the gifted during their student-teaching placements to determine the relative effectiveness of direct instruction alone in comparison with direct instruction coupled with coaching in the classroom. Further, cooperating teachers who work with pre-service teachers will be studied to see if the interventions have an impact on their attitudes and/or instruction. Finally, a sub-sample of the pre-service teachers studied will be followed into their first year of teaching to determine longevity of attitudinal and instructional impact of the interventions.

Social and Emotional Adjustment of the Gifted

Principal Investigators: *Dr. Claudia J. Sowa*
Dr. Kathleen M. May
Dr. Carolyn M. Callahan
Dr. Marcia A. B. Delcourt

Implementation: 1992-1995

Case studies of interpersonal, family and school factors and the interactions between and among these factors will be the basis for identifying those elements which contribute to healthy development or maladjustment within the gifted population. Data from interviews with teachers, parents and family members and, the children themselves will be used to build a model of resiliency in gifted children, to explicate dynamics of the gifted children and their families, and to identify hypotheses explaining differential adaptations made by gifted students to the environments in which they live.

(continued on page 6)

Year three ABSTRACTS

(continued from page 5)

Continuation of Motivation and Underachievement in Urban and Suburban Gifted Preadolescents

Principal Investigator:* *Dr. Pamela R. Clinkenbeard
Implementation: 1991-1995

We will investigate factors that seem to create or inhibit a "gifted" level of performance, both in those who have been identified as gifted and those who have not, at the middle school level. We will focus on two main factors in the gap between potential and performance: motivation and disadvantage. This project will describe in qualitative fashion the motivation patterns found in both suburban and economically disadvantaged urban classrooms of gifted preadolescents. Expected knowledge includes some answers to these questions: Do suburban classrooms for gifted preadolescents reveal different motivational patterns from those in economically disadvantaged urban classrooms? Are motivational patterns of students identified as gifted different in kind and/or degree from motivational patterns of other students? Does the experience of being labeled "gifted" cause a shift in motivation-related behavior?

Continuation of A Theory-Based Approach to Identification, Teaching, and Evaluation of the Gifted

Principal Investigator:* *Dr. Robert J. Sternberg
Implementation: 1990-1995

The purpose of this five-year project is to study three major aspects of gifted education — identification, teaching, and student evaluation — within one integrated investigation. A common problem in the education of gifted students is inconsistency between the way these students are identified and the instruction and assessment they receive. The focus of this project is to identify, instruct, and evaluate students based on Sternberg's Triarchic theory of intelligence. First, we are in the process of identifying students who are gifted in one of the three areas of the triarchic theory: analytic ability, creative-synthetic ability, or practical-contextual ability, as well as students who are balanced among these three kinds of giftedness. Second, we are developing different versions of an introductory course in psychological science that will be taught so as to emphasize analytic, creative, or practical skills. Third, evaluation will cover analytic, creative, and practical achievements. Equal numbers of students with each kind of giftedness will receive each kind of instruction, and all students will be evaluated on analytic, creative, and practical achievements. In summary, the project systematically manipulates identification, instruction, and evaluation of gifted students (as well as control students) in order to determine what would be gained by broadening our identification procedures, teaching in ways that are or are not tailored to gifted students' particular patterns of abilities, and assessing the students' performance in ways that either do or do not address their particular strengths.

Research in PROGRESS

Attitudes Toward Science Among High School Students

Julianne M. Smist
Springfield College
Springfield, MA

Research conducted over the past decades has painted a disturbing picture of the state of science knowledge and ability of American students. Internationally, American students are scoring at or near the bottom on science knowledge and proficiency tests; nationally, students' science knowledge has declined since 1969. Also disheartening is the fact that fewer and fewer students are choosing science as a profession and more students are avoiding college science courses.

The purpose of this proposed research is to specify, estimate and test a statistical model that explains the relationship of science self-efficacy, science aptitude, science attributions and attitude toward science, and to determine if the model is invariant with respect to students' ability, gender and ethnicity. The model was built on the theoretical frameworks of social cognitive theory, attribution theory and attitude toward science.

A national sample of 500 eleventh and twelfth grade students will complete the *Science Self-efficacy Questionnaire*, a science attributions instrument, and Fraser's *Test of Science-Related Attitudes* at the beginning of the school year. Data will be analyzed by means of confirmatory factor analysis to examine the constructs of attitude toward science and science self-efficacy.

The findings of this study will provide empirical foundations potentially useful in the development and evaluation of programs aimed at the recruitment and retention of women and minorities, two groups that have long been underrepresented in sciences.

Case Studies of Gifted Students With Emotional or Behavioral Problems

Terry W. Neu
The University of Connecticut
Storrs, CT

The gifted student has long been considered immune to emotional or behavioral disorders. Several studies have recently questioned the lack of identification of such disorders among the gifted population. This study will investigate factors contributing to the perceived emotional or behavioral disorders (EBD) of selected gifted students. It will also examine how these students were identified as gifted and EBD. Students who have simultaneously demonstrated gifted behaviors and those characteristics associated with EBD (as defined by the National Definition Task Force, 1990) will be sought for participation in this study. Qualitative methodology, including open-ended interviews, document review, and classroom observations, will guide this descriptive case study research. This study will describe the observable characteristics of students who are both gifted and EBD. The problems relating to the identification of these students as gifted and EBD will also be examined.

A Content Analysis of the Appropriateness of Kindergarten Curriculum and Instructional Materials for High Ability Students

Florence Caillard
The University of Connecticut
Storrs, CT

Research in early childhood education has continually demonstrated the importance of providing training and guidance to children during their early years. Kindergarten programs are now an important part of primary education. These programs have to adapt to a changing and diverse population (e.g., change in family or change in the workforce) and, therefore, new curriculum and new techniques for meeting the needs of students are often sought by teachers and parents. One approach to meeting these needs has been to develop curriculum according to the developmental needs of children within a specific age group. Research indicates that the developmental approach establishes a broader, more individualized, learning base than other instructional approaches. Researchers, however, currently report a wide range of variability with respect to the quality of these developmentally appropriate curriculum guides and materials. Developmentally appropriate curriculum has been defined as curriculum that is created to meet the developmental needs of the child, rather than basing curriculum decisions solely on the chronological age of the child. Little research has been found which addresses high ability young children and how the curriculum is modified to meet their needs. Kindergarten curriculum has been a topic of concern for the past few years, however, little research has been conducted to assess: 1) the quality of the kindergarten curriculum design and materials used in meeting the needs of high ability students in the regular classroom; and 2) the consistency between guidelines from various organizations to design curriculum and the actual materials used to implement the curriculum for high ability students.

The objective of this study is to use a content analysis to investigate the appropriateness of kindergarten curriculum guidelines and instructional materials used in kindergarten to meet the developmental needs of high ability kindergarten students.

The Learning Outcomes Study

Marcy Delcourt
The University of Virginia
Charlottesville, VA

The following is a correction to an article that appeared in the March 1992 NRC/GT Newsletter.

In the section Initial Results: Year one, Achievement, the text stated that "initial findings indicate that students in Special Schools showed the most significant gains in Mathematics Problem-Solving, Social Studies, and Science when compared to students in all other types of programs." The text should read "initial findings indicate that students in special schools showed significant gains in Science when compared to students in all other types of programs. For Mathematics Problem-Solving, the increase in scores from fall to spring was significantly higher for students from special schools than for students in separate classes and comparison schools. Regarding Social Studies, students in special schools and in pull-out programs showed greater increases in scores than students in separate classes and in the comparison group."

These results reveal complex relationships between achievement and program types. As the article indicates, these findings may be due to fluctuations in curriculum across the different programs and it is important to track the progress of these students over another year to examine whether or not these trends continue. Please refer to the full text from the March 1992 issue of the newsletter for a description of the study and additional results from the project.

COMMENTARY

101 Ways to Read a Book

A Review of *Terman's Kids* by Joel Shurkin

Jonathan A. Plucker
West Point Elementary School
West Point, NY

While the presentation of the book review has occasionally been accomplished in a creative manner (Feldhusen, 1973; Hohn, 1975), its purpose has remained the same: to help the potential reader decide whether to read and possibly purchase the book. But after the decision has been made to read the book, the review has lost its usefulness. Indeed, suggestions for how to go about reading the book are few and far between.

Granted, this situation is not terribly disturbing when the book is *Green Eggs and Ham*. Problems arise, however, when an attempt is made to read a book with numerous, detailed themes, such as Shurkin's *Terman's Kids*, which deals with the longitudinal study through which Lewis Terman, the late Stanford psychologist, followed the lives of more than 1,500 talented children. The study began in 1922, and the lives of the surviving "Termites," as his subjects refer to themselves, are still being tracked by Terman's successors. Terman's legacy, through the publication of revisionist biographies (e.g., Seagoe, 1976), has grown to partially overshadow the studies, which constitute more than 7 volumes and numerous articles (as well as many unpublished studies and findings). How can a review assist the reader in analyzing one of the most complex individuals and series of studies in the history of the investigation of human behavior?

A possible method for increasing the utility of the review could be the inclusion of a set of questions to serve as guides to readers as they make their way through the book. For example, guiding questions for *Terman's Kids* include:

- In what ways did Terman's "conservative" definition of giftedness (above 140 IQ) affect the study? Would the results have been different if he had used a more flexible definition?
- How is Terman's personality manifested in the study?
- Why have some of the studies' findings been criticized and discarded, while others have been accepted almost unconditionally?
- What principles and concepts in education and psychology are based upon Terman's work? Do the studies give sufficient evidence to justify the formation of these principles and concepts?

And, most importantly:

- Considering the errors, biases, and controversy surrounding Terman and his longitudinal study, which of his contributions helped him to attain such an important influence in psychology and education?

Without the help of these questions, the reader could resort to using the comments on the dust jacket or cover of the book to help create a frame of reference through which to read the book (*Reading* a book by its cover as opposed to *judging* a book by its cover). A good cover will describe the targeted audience, as well as some major questions that can be answered after reading the book. In fact, after reading *Terman's Kids*, I found that my responses to the book, both positive and negative, were represented by the information on the cover.

Shurkin has attempted to write the definitive book on Terman and his work, and this is both the book's greatest strength and most glaring weakness. In a positive light, Shurkin devoured an imposing task: the analysis of the voluminous data collected by Terman and his staff, some of which (e.g., studies of homosexuality) are rather obscure. Many of Terman's pre-1922 studies are analyzed, as are his research projects which ran concurrent to the longitudinal study.

With respect to the audience to which the book is targeted, however, Shurkin is much less successful. The back cover states that Terman's "insights into the nature-verus-nurture conundrum will fascinate parents, scholars, and anyone who works professionally with children" (Shurkin, 1992). But by aiming the work at several targets (i.e., audiences, with each looking to gain something different from the Terman investigations), Shurkin fails to hit any "bull's-eyes." The mini-biographies of Termites clustered between every few chapters will appeal to *every* reader, especially those narratives in which the true identity of the Termite is revealed. These intermittent sections are very readable, which contrasts them with many of the actual chapters of the book. Because of the mass of data which is reported, these sections can become rather dry and lacking in implications, which will provide parents with little motivation to read further. In addition, scholars will be frustrated by the inconsistent analyses of the studies. For example, Shurkin criticizes Terman repeatedly for not comparing his research to other longitudinal studies, yet he also questions, on methodological grounds, the few instances in which Terman *did* make comparisons. Both criticisms hold some validity, but these sections are not concisely written, creating an occasional appearance of hypocrisy. Throughout the statistical analyses, Shurkin frequently left me with the feeling that he stopped too soon, without exploring the implications thoroughly enough. The book is written too technically to be a meaningful survey of Terman's life and work; it lacks the depth needed by scholars and the practical implications desired by parents and educators.

Shurkin correctly points out many of Terman's weaknesses, many of which have been glossed over in other biographical works (Seagoe, 1976); for example, he was not a model of moral propriety, and he frequently involved himself in the lives of his subjects, writing letters of recommendation, giving advice to parents, and counseling the "Termites." But in Shurkin's desire to avoid the appearance of favoritism (he is a science writer at Stanford), he may have unnecessarily prevented himself from investigating the positive aspects of Terman and his personality. After all, Terman was arguably one of the most influential psychologists during the first half of this century, with a presence that is still felt in numerous disciplines, especially education and psychology.

While I feel that this book has some glaring weaknesses, I still give it a guarded recommendation for both scholars and educators as a reference for further investigation into

criticism of the role of Terman's influence in the lives of his subjects is pertinent from a research point of view. However, from a more practical perspective it caused me to wonder whether the absence of this influence would have had an appreciably negative effect on the level of the Termites' success; if so, this suggests that the roles of both personal and career counseling have a positive effect on the lives of high potential youth.

Definitive books on a subject should provide a comprehensive background, while piquing the reader's interest and creating a desire to further investigate the details and complexities of the topic. *Terman's Kids*, however, tends to create more questions about the basic aspects of the topic than it is able to answer. The book is still useful as a guide, however, because Shurkin has done the literature a service by calling attention to the more obscure aspects of the Terman studies, one of the great research treasures of psychology and education. We can only wish that he had chosen one target, rather than three.

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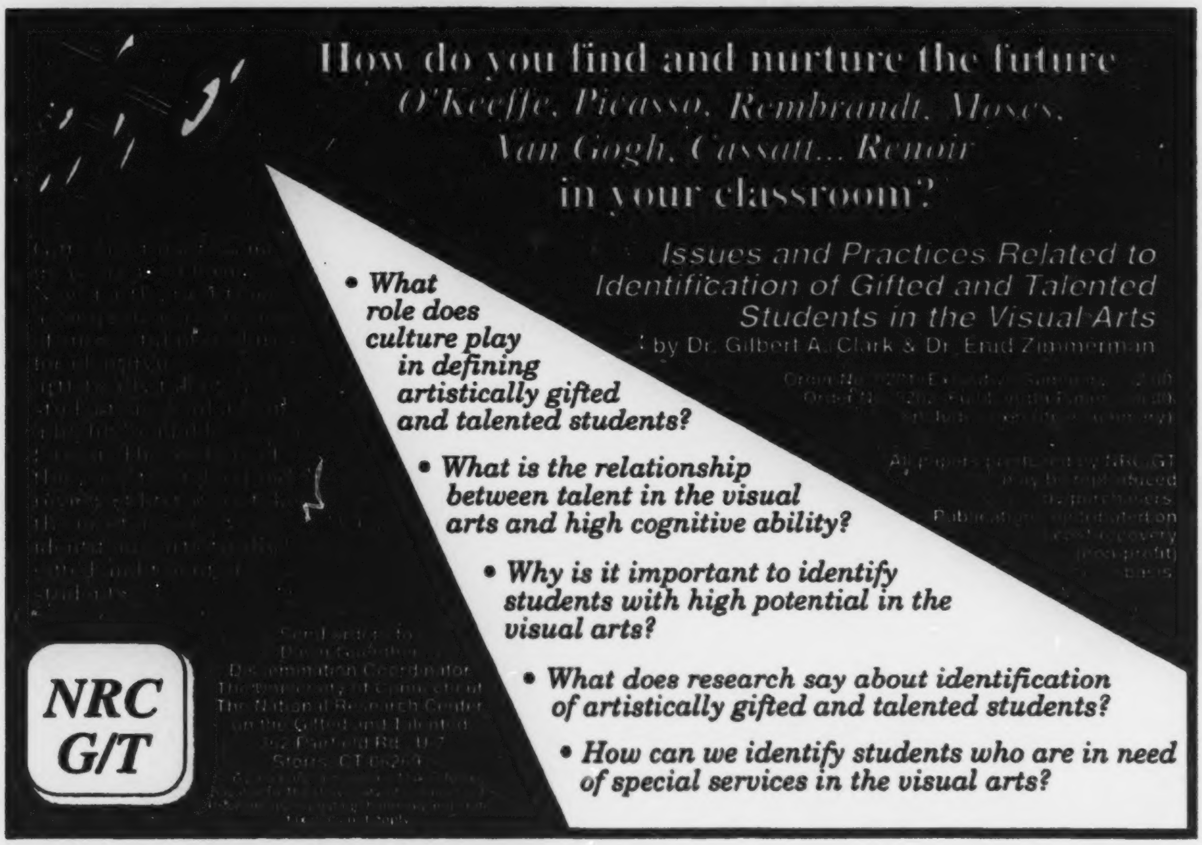

How do you find and nurture the future
*O'Keeffe, Picasso, Rembrandt, Moses,
Van Gogh, Cassatt... Renoir*
in your classroom?

*Issues and Practices Related to
Identification of Gifted and Talented
Students in the Visual Arts*
by Dr. Gilbert A. Clark & Dr. Enid Zimmerman

- *What role does culture play in defining artistically gifted and talented students?*
- *What is the relationship between talent in the visual arts and high cognitive ability?*
- *Why is it important to identify students with high potential in the visual arts?*
- *What does research say about identification of artistically gifted and talented students?*
- *How can we identify students who are in need of special services in the visual arts?*

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COMMENTARY

UNDERACHIEVEMENT AMONG GIFTED AND TALENTED STUDENTS: WHAT WE REALLY KNOW

Mary Lukasic, Vicki Gorski, Melinda Lea
University of Houston-Clear Lake
Houston, TX

Rita Culross
Louisiana State University
Baton Rouge, LA

This review summarizes the research over the past 50 years on underachievement among gifted and talented students. The review was limited to published journal articles with a critical eye to describing, analyzing, and evaluating the literature. The review sought to answer five primary questions:

(1) What is underachievement?
(2) How do we identify underachievers?
(3) Who are the underachievers and what are they like?
(4) What causes underachievement?
(5) What can we do to turn underachievers into achievers?

It was found that although there is general consensus that underachievement is a discrepancy between potential and performance, operational definitions vary widely and make cross comparisons of studies difficult. Definitions of low achievement range from failing a grade to performing one and one-half years below grade level. Identification is a Catch-22. In order to be recognized one must already be performing at some level. No real data exist on the numbers of children, particularly among the low SES, who are never identified. Early identification promises the best hope for reversing underachievement, yet it is the most problematic to do. Underachievement in the gifted is attributable to personality characteristics of the child, dysfunction in the family, or failure by the school system. Most researchers blame one factor and ignore the interaction of several variables. Gifted underachievers are branded as nonconforming, socially isolated, and lacking in motivation and self-esteem. Few studies, however, distinguish between being different and being maladjusted or between achievement in socially-approved areas and achievement in other areas. Treatment approaches have been confined largely to counseling and changes in education. Both approaches appear to make gifted underachievers feel better about themselves, but little improvement in actual performance is noted.

In spite of great interest in the topic, the existing literature on underachievement among the gifted is drawn largely from studies of an anecdotal or a quasi-experimental nature. Research findings are sometimes based on studies which utilized small sample sizes, dubious measurement techniques, and inadequate controls. A basic need in the field exists for carefully controlled, experimental studies. Multivariate design and meta-analyses are also needed to sort out the effects on achievement of a multitude of internal and external factors.

Specific topics that seem promising for research include investigating the achievement of underachievers in nonacademic settings, training teachers and parents to recognize underachievement, developing techniques for early identification, identifying sex differences in the onset and pattern of underachievement, specifying peer, teacher, and classroom factors that contribute to underachievement, and expanding the study of approaches to treat underachievement.

Recommendations for practices include:

(1) screening for underachievement among gifted students as early as kindergarten,
(2) training of parents and teachers to recognize underachievement, using multiple identification criteria,
(3) seeking input from multiple sources in developing educational or counseling approaches,
(4) providing for psychological needs of gifted students,
(5) counseling involving family-centered approaches to intervention,
(6) intervening differently with males than females, and
(7) changing the educational environment through individualization, emphasis on study skills, promotion of creativity, accent on coping skills, and the addition of support services to gifted and talented programs.

Copies of the complete paper may be obtained by sending a stamped, self addressed business envelope to:

Rita R. Culross
388 Pleasant Hall
Louisiana State University
Baton Rouge, LA 70803
FAX: 504-388-5710

A Brief Note... on the Format of the NRC/GT Products

We have attempted to prepare the NRC/GT products in an attractive and functional format to increase the number of people who may have access to our work. For this reason we have prominently displayed the names and logos of the participating universities on the cover of each product, and we have used a high quality paper stock to give the products a "sturdy appearance" and an element of source credibility. For shorter products that we hope will be reproduced in significant numbers, we have used a "slip-on" binding to facilitate easy reproduction. All Center products are, by design, *not copyrighted*; and we encourage all users of Center products to reproduce them and distribute them as widely as possible.

At the same time, in order to minimize costs and conserve natural resources, most of our lengthier products are printed on both sides of the page. Most of the lengthier reports include abstracts and executive summaries, detailed tables of content, and extensive references.

If you should have any suggestions regarding the format of Center products, we would be most pleased to hear from you. We hope that our careful attention to editing, the use of subsections, and lively writing styles will help achieve our goal of maximizing the impact of Center products.

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Announcing the Second Biennial
Henry B. and Jocelyn Wallace
National Research Symposium on Talent Development

May 20-22, 1993

The Connie Belin National Center for Gifted Education

The University of Iowa   Iowa City, Iowa

Nicholas Colangelo, Director   **Susan Assouline, Associate Director**

The Connie Belin National Center for Gifted Education will host the second biennial Wallace National Research Symposium on Talent Development. This symposium provides an opportunity for researchers and theorists from across the nation to present their current work on talent development, creativity, and gifted education. The symposium will be held at The University of Iowa in Iowa City, Iowa, on May 20-22, 1993.

Invited papers will be presented by:

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- Nicholas Colangelo
- Howard Gardner
- Leon Miller
- Richard Snow
- Theresa Amabile
- Dewey Cornell
- Nancy Ewald Jackson
- Joseph Renzulli
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For further information about symposium registration, call 1-800-336-6463 or FAX 319-335-5151.

The Henry B. and Jocelyn Wallace second biennial National Research Symposium on Talent Development has been made possible through an endowment from the Wallace Genetic Foundation.

COMMENTARY

Cluster Grouping Fact Sheet: How to Provide Full-Time Services for Gifted Students on Existing Budgets

Susan Winebrenner
President, Education Consulting Service, Lombard, IL

Barbara Devlin
Consultant, Villa Park District #45, DuPage County, IL

There is an alarming trend in many places to eliminate programs that benefit gifted students, usually in the interest of returning all students to heterogeneous learning environments. Educators have been bombarded with information from many sources that make it appear that there is no benefit to ability grouping for any students. The work of Kulik and Kulik, Allan, Feldhusen, and others clearly documents the benefits of keeping gifted students together for at least part of the school day, in their areas of academic strength. Although there is evidence that average and below average students have more to gain from heterogeneous grouping, we must not make the mistake of thinking we have to choose between ability grouping and providing appropriate learning opportunities for gifted students. The practice of cluster grouping represents a mindful way to make sure gifted students continue to receive a quality education at the same time as schools work to improve learning opportunities for all our young people.

What does it mean to place gifted students in cluster groups?

A group of four to six identified students, usually those in the top 5% of the grade level population in ability, are *clustered* in the classroom of one teacher who has special training in how to teach gifted students. The other students in that class are of mixed ability. If there are more than six gifted students, two or more clusters may be formed.

Isn't cluster grouping the same as tracking?

No, they are different. In a tracking system, all students are grouped by ability for much of the school day, and students tend to remain in the same track throughout their school experience. Research by Kulik and Kulik documents that gifted students benefit from learning together and need to be placed with students of similar ability in their areas of strength. Cluster grouping of gifted students allows them to learn together while avoiding permanent grouping arrangements for children of other ability levels. As a matter of fact, schools can maintain separate sections for the most able students, while grouping all other students heterogeneously.

Why should gifted students be placed in a cluster group instead of being assigned evenly to all classes?

When teachers try to meet the diverse learning needs of all students, it becomes extremely difficult to provide adequately for everyone. Often, the highest ability students are expected to "make it on their own." When a teacher has *several* gifted students, taking the time to meet their special learning needs seems more realistic. Furthermore, the social and emotional problems that occur when gifted students struggle to understand why they seem so different from their age peers may be avoided. Gifted students will actually remain more humble when they have consistent academic competition.

What are the special learning needs of gifted students?

Since these students have previously mastered many of the concepts they are expected to "learn" in a given class, a huge part of their school time may be wasted. They need exactly what all other students need: consistent opportunity to learn new material and to develop the behaviors that allow them to cope with the challenge and struggle of new learning.

Can't these learning needs be met in heterogeneous classes that use cooperative learning?

When gifted students are always placed in mixed-ability groups for cooperative learning, they frequently become bosses and/or tutors. Other students in these groups rely on the gifted to do most of the thinking, and may actually learn less than when the gifted students are not in their groups. When gifted students work in their own cooperative learning groups from time to time on appropriately challenging tasks, they are more likely to enjoy cooperative learning, while the other students learn to rely less on the gifted students and become more active learners. The best guidelines are that when the task is of the drill and practice type, gifted students should be learning how to cooperate in their own groups in which the task is difficult enough to require cooperation. When the task is open-ended and requires divergent thinking, it is more appropriate to include the gifted students in heterogeneous cooperative learning groups.

Isn't it elitist to provide for the needs of gifted students if other students can't get their learning needs met as well?

It is inequitable to *prevent* gifted students from receiving an appropriately challenging education until other students get their learning needs met. The practice of cluster grouping for gifted students allows educators to come much closer to providing better educational services for all students, instead of sacrificing the needs of gifted students to the false perception that our educational system must choose which students to serve and which to ignore. Furthermore, in the non-cluster classrooms, teachers report they have the time to pay more attention to the special learning needs of those for whom learning may be more difficult. For that reason, some schools choose not to place struggling students in the same class that has the cluster group of gifted students.

If gifted students are not placed in some classes, won't those classes lack positive role models for academic and social leadership?

Teachers overwhelmingly report that new leadership "rises to the top" in the non-cluster classes. There are many students other than the gifted who welcome opportunities to assume available leadership roles.

Won't the presence of a cluster group of gifted students inhibit the performance of the other students in that class, having a negative effect on their achievement?

This is not a problem when the cluster group is kept to a manageable size of no more than six students. As a matter of fact, cluster teachers report that there is general improvement in achievement for the entire class. The effects of the cluster grouping practice may be evened out over several years by rotating the cluster teacher assignment among specially trained teachers and also by rotating the other students so they have a chance to be in the same class with the cluster group.

What specific skills are needed by cluster teachers?

Since gifted students are as far removed from the "norm" as the learning disabled, it is equally necessary for teachers of all exceptional children to have special training. Teachers of gifted students must know how to:

-recognize and nurture "gifted" behaviors
-understand the social-emotional needs of gifted youngsters
-allow students to demonstrate previous mastery of concepts
-provide opportunities for faster pacing of new material
-incorporate students' passionate interests into their independent studies
-facilitate sophisticated research investigations
-provide flexible grouping opportunities for the entire class

Should the cluster grouping model replace pull-out programs for gifted students?

No. Cluster grouping is one important component of a comprehensive program for gifted students. The services of a resource teacher may be used to provide assistance to all classroom teachers in their attempts to differentiate the curriculum for gifted students. If the resource teacher offers a "pull-out" class, there is usually less resistance from trained cluster teachers about students leaving the regular class for a resource program. Cluster grouping provides an effective complement to any gifted program.

What are the advantages of using the cluster grouping concept?

For the gifted students, the advantages are that they feel more accepted when there are other students just like them in the class. They are more likely to choose more challenging tasks when they are able to work with other gifted students. For the teachers, the advantages are that they no longer have to deal with the strain of trying to meet the needs of just one precocious student, while another teacher is experiencing similar strain with another precocious student in a different classroom. When teachers know several gifted students will benefit from differentiation efforts, it seems more realistic to make that differentiation available. For the school, the advantage is that it is finally possible to provide a full-time, cost-effective program for gifted students, because their exceptional learning needs are more likely to be met when they are grouped together with a specially trained teacher.

What are the disadvantages of using the cluster grouping concept?

In some communities, there may be pressure from parents to have their children placed in a cluster classroom, even if they are not in the actual cluster group. This situation may be handled by: providing training for all staff in compacting and differentiation so parents can expect those opportunities in all classes, rotating the cluster teacher assignment every two years among teachers who have had special training to demonstrate that many teachers are eligible to have the cluster group in their class, and even by cycling most students into the cluster teachers' classrooms on a rotating basis. Another potential problem is that the cluster grouping concept is effective only when teachers receive special training on how to differentiate the curriculum, and when their supervisor expects them to use those strategies consistently to maintain the integrity of the program.

Is cluster grouping feasible only in elementary schools?

No. Cluster grouping may be used at all grade levels and in all subject areas. Gifted students may be clustered in one section of any class with other students of mixed ability, especially when there are not enough students to form an advanced section of a course. Cluster grouping is also a welcome option in rural settings or wherever small numbers of gifted students make programming difficult.

Further information is available from: Phantom Press,
15 Lombard Circle, Lombard, IL 60148

References:
Allen, S. (March, 1991). Ability grouping research reviews: What do they say about grouping and the gifted? *Educational Leadership*, *48*(6), 60-65.
Feldhusen, J. (March, 1989). Synthesis of research on gifted youth. *Educational Leadership*, *46*(6), 6-11
Kulik, J.A. & Kulik, C-L.C. (1990). Ability grouping and gifted students. In N. Colangelo & G. Davis, (Eds.), *Handbook of gifted education*. Boston: Allyn/Bacon.

Just Off The PRESS

Creative Problem Solving: An Introduction

Donald J. Treffinger and Scott G. Isaksen
Sarasota, FL

This is the latest update of the long-standing and widely researched Creative Problem Solving (CPS) model, building on more than three decades of research, development, and field experience. This book provides a clear, concise overview of the three important components of CPS (Understanding the Problem, Generating Ideas, and Planning for Action), and the six specific CPS stages (Mess-Finding, Data-Finding, Problem-Finding, Idea-Finding, Solution-Finding, and Acceptance-Finding). It presents newly revised and updated definitions of creative and critical thinking, "Mess Mapping," a number of new CPS strategies, and updated information on applying CPS.

Copies may be obtained from:
Center for Creative Learning, Inc.
4152 Independence Court, Suite C-7
Sarasota, FL 34234-2147

Programs and Practices in Gifted Education: Projects Funded by the Jacob K. Javits Gifted and Talented Students Education Act of 1988

Sandra L. Berger
The ERIC Clearinghouse on Handicapped and Gifted Children
Reston, VA

Find out who is doing what, where. This directory of 46 projects provides information on what has been accomplished by projects serving the "difficult to identify" culturally and linguistically diverse and underachieving gifted and talented population. Comprehensive, detailed descriptions include program goals and target population characteristics. Two overviews make information easy to retrieve. This product is also available on diskette for Macintosh users who have Filemaker Pro software by Claris.

To order call:
703-264-9474
No.R636. 1992. 220 pp.
CEC Member Price $12.50
Regular Price $18.00

Understanding Those Who Create

Jane Piirto
University of Ashland
Ashland, OH

This book is a comprehensive synthesis of the research into creativity and the creative process. Part I explores creativity and giftedness. Part II discusses the measurement of creativity. Part III discusses creative people by domain. There are separate chapters on creative writers; visual artists; scientists, mathematicians and inventors; musicians and composers; and actors and dancers. Part IV discusses how teachers and parents can enhance creativity in children. James Alvino called it "a genuine magnum opus on creativity"; Rena Subotnik called it "an important contribution to the field"; Mary Meeker called it "fair, objective and positive." The book contains 360 pages and several hundred references. The author is Director of Gifted Education at Ashland University, former principal of the Hunter College Elementary School, and a published novelist and poet.

Price: $20.00
Ohio Psychology Press, Dayton, OH
Ashland, Ohio

How Do Teachers Understand Research When They Read It?

J. S. Zeuli
Michigan State University
East Lansing, MI

Attention to teachers' beliefs has become an essential feature of studies designed to help teachers understand research. The beliefs on which researchers and teacher educators typically focus are teachers' beliefs about teaching and learning. Teachers' beliefs about educational research, however, may also strongly influence their understanding and use of research. This study provides a description and analysis of how teachers read research in light of their prior beliefs about what research is and how it should influence their teaching. The subjects of the study were two distinct groups of teachers with varying levels of prior involvement with educational research. One group included five former "teacher collaborators" who had worked with researchers on research projects for at least one year. The second group was comprised of eight teachers with considerably less experience with research. In light of teachers' prior beliefs about research, the author shows that teachers differed substantively in terms of their willingness and/or ability to read and understand research.

Copies may be obtained by calling 517-353-4994

RECENT RESEARCH

Attitudes of Day School Principals and Teachers Toward Gifted Education

Melvin A. Isaacs
Yeshiva University
New York, NY

This study investigated the reported attitudes toward educating the academically gifted among principals and teachers of both the General Studies and Judaic Studies departments employed in Board of Jewish Education-affiliated day schools in the Greater New York area. A modified version of the Wiener Attitude Scale was adapted in order to reflect the conditions of learning in the participating Jewish day schools. The questionnaire was completed by 357 teachers and 39 principals randomly selected from three lists that classified the schools by the variable "Type." This represented 39.8% of the population surveyed.

Six research questions were analyzed. The data comprised two major subscales: a) attitudes and implications of gifted programming, and b) attitudes toward formatting structures of gifted programming.

Analysis of the data suggested that attitudes of teachers and principals were generally positive toward gifted education. When analyzed by the variable "Department," it was found that teachers who taught in the General Studies department and in both departments had a more favorable attitude toward gifted education than Judaic Studies staff. Results for the variable "Type of School" indicated that teachers of co-ed schools had more favorable attitudes than those who taught in all-boy and/or all-girl schools. Significant differences in attitudes were found between teachers who had educational background in gifted education and those who did not. Results also suggested that teacher attitudes were influenced by an existing gifted program within the school but this did not seem to affect the attitudes of principals. Principals reported preferences toward serving gifted students within the framework of the regular classroom. They further reported that specialized training in teaching the gifted was not necessary. Both teachers and principals with ten or more years of experience reported a more positive attitude toward organizing gifted students into instructional units.

In addition, findings indicated that there were differences of opinion among principals and teachers in the three types of schools surveyed and in each of the departments as to the definition of giftedness, the existence of specific

Family Impact on High achieving Chinese-American Students: A Qualitative Analysis

Den-Mo Tsai
Taitung Teacher's College
Taitung, Taiwan

Today, Asian-Americans are often called a "model-minority." Evidence exists that Asian-American students excel in school. Their academic achievement has created considerable attention among educators. The purpose of this study was to investigate family factors that might contribute to the high academic achievement of one group of Asian-Americans, the Chinese-Americans.

Qualitative methodology was used to investigate family factors. Subjects in this study were Chinese-American parents with high-achieving children over the age of 10. Both parents and their highest-achieving child were interviewed. A semi-structured open-ended questionnaire developed by the researcher was sent to parents before the interview was conducted. Thirty-five questionnaires were completed, and ten families with extremely high-achieving children were interviewed. Four of the students are Westinghouse Scholarship winners, and three are Presidential Scholars. All the high achievers are currently attending prestigious universities like Harvard and Yale. The first interview with parents lasted approximately four hours. Follow-up interviews were pursued by phone. The high-achieving students were also interviewed by phone.

Results in this study indicate that the families with high achieving Chinese-American students tend to have parents with stable marriages and close relationships among family members. The family values contributing to high achievement include an emphasis on family cohesion, education, hard work, discipline, and the respect for teachers and elders. Parents also tend to emphasize the importance of mingling with the U.S. mainstream society. Characteristics of successful parenting are:

Emphasizing consistent attitudes towards education
Expecting children to perform well based on their ability
Understanding and challenging children
Supporting children psychologically and financially
Providing role models
Spending time with children beneficially
Teaching young children naturally
Reinforcing children's good habits
Communicating with teachers.

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The National Research Center on the Gifted and Talented Newsletter

Winter 1993

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NRC/GT 50/500/5000

E. Jean Gubbins
The University of Connecticut
Storrs, CT

The third year of operation of The National Research Center on the Gifted and Talented is half over, and we are looking at some of our accomplishments. We established a national advisory system to determine the research directions and a network of Collaborative School Districts for our quantitative and qualitative research studies. We wanted the process of research design and implementation to include representation from every state and territory. Well, we finally hit the mark of **50** states as of December 1992 with the addition of Delaware. We also added one territory: Virgin Islands. We would like to welcome new districts. Now we are looking for contact persons in three remaining territories: Puerto Rico, American Samoa, and Trust Territory. Do you know anyone?

The mark of **500** was reached in January in response to the NRC/GT invitational conference in Charlottesville, Virginia. The Research and Classroom Practices in Gifted and Talented Education Conference was oversubscribed beyond our expectations when 500 people pre-registered. We planned a local conference for 100 people, as part of our annual meeting with the National Research Center Advisory Council, and stretched all accommodations to the limit by admitting 280 people. The conference featured 13 research studies and several of these same studies are highlighted in this edition of the *NRC/GT Newsletter* under Year 2 Updates. We are thrilled with the response for requests for information about the Center's research. More publications are being released each month. We will keep you apprised of their availability. Take a look at the Winter, 1993 edition of the *Journal for the Education of the Gifted.* The entire volume features several research studies that you have helped us to implement.

(continued on page 2)

New districts involved with the NRC/GT

Boulder Valley Public School District
Boulder, CO

Hartford Public Schools
Hartford, CT

Red Clay Consolidated School District
Wilmington, DE

Miami Country Day School
Miami, FL

North Kentucky Christian School
Florence, KY

Brockton Public Schools
Brockton, MA

Bronson Community Schools
Bronson, MI

Coldwater Community Schools
Coldwater, MI

Las Cruces Public Schools
Las Cruces, NM

Tigard/Tualatin School District
Tigard, OR

Round Rock I.S.D.
Round Rock, TX

St. Thomas/St. John School District
Charlotte Amalie, Virgin Islands

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BEST COPY AVAILABLE

Our mailing list has grown to over **5000** people. The dissemination process is critical to getting the research results into the hands of practitioners in a timely manner. You can be an integral part of the process. Share the NRC/GT materials with colleagues, parents, and friends. Our materials are not copyrighted; feel free to reproduce all documents - just cite the NRC/GT as the source. **50/500/5000** can become **50000** contacts with your help.

Print media and conferences are not our only communication techniques. Last year's satellite video presentation on Curriculum Compacting by Dr. Sally M. Reis, Peg Beecher, and Del Siegle was very effective. We are still receiving requests for copies of the videotape and guidebooks. We are currently finalizing plans for another satellite presentation, focusing on thinking skills. For a soon to be available informational packet, please write to our Dissemination Coordinator, Dawn R. Guenther.

We are currently developing our resubmission proposal for Year 4 of The National Research Center on the Gifted and Talented. We are expanding initial plans which have worked so well, and we are incorporating new ideas based on feedback from so many of you in our network. Our Collaborative School Districts, National Research Center Advisory Council, and Consultant Bank Members make our research center a model operation. The network continues to grow, and we would like to welcome new members of our Consultant Bank.

50/500/5000 to plans for Year 5 of The National Research Center on the Gifted and Talented (1994-95) — we continue to focus on past accomplishments, present research, and future activities. The evolving research findings will continue to have an impact on the educational opportunities for students and professional development experiences for practitioners.

New Consultant Bank Members

James Alvino
Future Problem Solving Program
Ann Arbor, MI

Donna Rae Clausen
University of Wisconsin
Whitewater, WI

C. June Maker
University of Arizona
Tuscon, AZ

Roy P. Martin
University of Georgia
Athens, GA

Gina Ginsberg Riggs
Gifted Child Society
Oakland, NJ

Linda Jensen Sheffield
Northern Kentucky University
Highland Heights, KY

Dean Keith Simonton
University of California
Davis, CA

Joyce VanTassel-Baska
College of William and Mary
Williamsburg, VA

Lisa Wright
Columbia University
New York, NY

motivation and the gifted

Pamela R. Clinkenbeard
Yale University
New Haven, CT

The following publications are some that I consider to be particular gems in the area of motivation and the gifted. Each is an excellent resource for educators and counselors interested in exploring issues of motivation and the gifted, especially the distinctions between intrinsic and extrinsic motivation and their educational applications. Some of these resources may have been overlooked because their titles do not mention motivation, or because they are written by authors who are not active in the field of gifted education. I have not included well known and widely available publications such as Sylvia Rimm's *Underachievement Syndrome* and Miriam Adderholdt-Elliott's *Perfectionism*, which also address these issues.

Amabile, T. M. (1989). *Growing up creative: Nurturing a lifetime of creativity.* New York: Crown Publishers.

The title of Amabile's book does not give an indication of the importance she places on motivation. The central thesis of her research on creativity, upon which this book is based, is that intrinsic motivation is a necessary condition for high levels of creative production, and that extrinsic motivation damages creativity. She refers to the four "creativity-killers:" evaluation, reward, competition, and restricted choice. *Growing Up Creative* is a readable, practical handbook for parents and teachers. It is full of anecdotes about individual children, and information from interviews with creative adults. There are a number of suggestions and activities designed to foster creativity in children while maintaining their intrinsic motivation to explore and create. Amabile writes equally well for a general audience as she does for a scholarly audience; though this book is based on her psychologically sophisticated research, she presents the results of that research through anecdote and example, rather than charts and statistics. (The endnotes contain references to many of her academic publications.) Some of the chapter titles are "Vision and Passion," "The Motivation for Creativity," "How to Destroy a Child's Creativity," and "Keeping Creativity Alive at School: Suggestions for Teachers." In the preface to this book, Amabile states: "The most crucial factor in creativity is the *motivation* to do something creative. Talent, personality, and skill tell us what a child *can* do; motivation tells us what that child *will* do."

Bell, L. A. (1989). Something's wrong here and it's not me: Challenging the dilemmas that block girls' success. *Journal for the Education of the Gifted, 12,* 118-130.

This ethnographic article presents several more dilemmas that seem to block bright girls from engaging fully and successfully in school. The strength and near unanimity of girls' feelings is particularly striking. As part of a project to study internal barriers to girls' achievement, this study shows how educators and parents can help girls externalize and challenge the limits to their success. Bell and her colleagues met weekly for 14 weeks with a group of high potential urban elementary school students (grades three through six). The ethnic and economic breakdown of the 26 girls matched that of the school: 15% Hispanic, 28% Black, 57% White, and 39% eligible for free or reduced lunch. To start the discussions, the researchers introduced issues defined in the literature as problematic for females. The dilemmas, as expressed by the girls and labeled by the researchers, included "smart vs. social;" "silence vs. bragging;" "failure vs. perfection;" "media 'beauty' vs. marginality;" "passive vs. aggressive;" and, underlying the other dilemmas, "conforming vs. being punished." The discussion groups served first as a way of showing girls that others face the same dilemmas, and second as a catalyst for creating new ways out of the dilemmas. For instance, the discussion of "passive vs. aggressive" resulted in the girls developing effective strategies for participating in classes when they feel the boys in the class are dominating the discussion and the teacher's attention. Bell presents several other creative solutions, developed by the girls themselves, which illustrate her conclusion: Instead of "What's wrong with me," girls can learn to say, "What's wrong out there, and what can we do to change it for the better?"

Helmreich, R. L., Beane, W., Lucker, G. W., & Spence, J. T. (1978). Achievement motivation and scientific attainment. *Personality and Social Psychology Bulletin, 4,* 222-226.

This article describes the first in a line of studies by Helmreich, his colleague Janet Spence, and others. These studies look at achievement motivation as a multidimensional phenomenon, comprised of intellectual mastery, orientation toward work, and competitiveness. The researchers measure eminent scientists, scholars, and others using a motivation measure called the Work and Family Orientation Scale. This study reports on data from scientists. Helmreich and his colleagues found that the scientists whose work was cited most by their colleagues scored high on work and mastery orientations, and relatively low on competitiveness. The next most cited group of scientists scored low on work and mastery orientations, but high in competitiveness. They report that these results were generally replicated with two other groups using very different criteria: undergraduates and their grades, and graduates of a business school and their income. That is, the most successful in each group scored high on work and mastery and low on competitiveness. The authors speculate that high competitiveness may be characteristic of scientists who jump from one "hot" topic to the next, but that competitiveness probably results in some fear of failure in those scientists who are also motivated by work and mastery orientations.

Middleton, J. A., Littlefield, J., & Lehrer, R. (1992). Gifted students' conceptions of academic fun: An examination of a critical construct for gifted education. *Gifted Child Quarterly, 36,* 38-44.

This article explores the radical notion that "fun" is not only acceptable in academics, it is a critical component of high quality academic activity. The premise here is that intrinsic motivation is important to education, and implicit in this kind of motivation is that students consider the activity to be fun. The authors present a model of academic fun and indicate how it was tested with students in grades three through seven. The three components that seem to comprise academic fun for gifted students include *interests* (they find the activity intrinsically interesting or find it a chance for self-expression), *arousal* (they find the activity exciting or novel), and *control* (they perceive that they have choices within the activity and that it is challenging but not too difficult). The authors offer suggestions for structuring classroom activities to promote academic fun, but caution against employing academically peripheral "fun and games" as a way of promoting interest.

Whitmore, J. R. (1986). Understanding a lack of motivation to excel. *Gifted Child Quarterly, 30,* 66-69.

This thoughtful article, by an author well known for her work on gifted underachievers, discusses motivation and these students. She cautions against the easy dismissal of gifted underachievers as "unmotivated" and asserts that the cause of underachievement in gifted students is usually a mismatch between the child's motivational characteristics and the opportunities provided in the classroom. She urges a systematic investigation into the nature of the individual student's problem, and an analysis of the classroom placement of the student. Her arguments are based on the premise that all students, and especially the gifted, want to master new knowledge and skills and to excel in school, but that various environmental factors and learning contexts can block that motivation to learn. She points out that punishment and pressure tactics are generally ineffective in the long term, and create further negative attitudes toward school and possibly emotional problems.

Year 2 Updates

Robert J. Sternberg and
Pamela R. Clinkenbeard
Yale University
New Haven, CT

There are two main research projects underway at the Yale University site of The National Research Center on the Gifted and Talented (NRC/GT). The first, led by Robert J. Sternberg, is a five year project designed to study identification, teaching, and evaluation of gifted students in one integrated investigation. The second project, led by Pamela R. Clinkenbeard, is a four year qualitative investigation of motivation in gifted middle school students. For each project, we will describe briefly our progress up through the second year of the grant, which ended May 31, 1992.

A Theory-Based Approach to Identification, Teaching, and Evaluation of the Gifted

This project is based on Sternberg's triarchic theory, which postulates three aspects of intellectual ability: analytic, synthetic-creative, and practical-contextual. A common problem in the education of gifted students is inconsistency between the way these students are identified, and the instruction and assessment they receive. For example, a student may be identified for a gifted program on the strength of high creativity test scores, but the program may consist of accelerated work in a traditional subject matter area. The creatively gifted student may or may not be gifted in the content of the program.

Analytic ability is seen in those students who are most likely to be identified for gifted programs: generally, those who score high on IQ tests and who do very well in schoolwork. Synthetic-creative ability is characteristic of students who show insight in solving novel problems and who generally think in non-entrenched ways, but who are probably less "school smart" than analytically gifted students. Practical-contextual ability is seen in students who are outstanding at coping with problems of everyday life, and who are skilled at adapting themselves to the environment; we might call them "street-smart."

Our main activities in the first two years were building and revising the curriculum for the program, developing and testing an experimental version of the Sternberg Triarchic Abilities Test (STAT), and making plans for the summer programs that will be the major source of project data. We identified 63 high school students who were high in analytic, creative, or practical intelligence. This identification was part of the final arrangements for our 1992 summer pilot program, called the Yale Summer Psychology Program (YSPP). In this program, different sections of an introductory course in psychology were taught to emphasize analytic, creative, or practical skills. Students were randomly assigned to the different course sections, and all were evaluated on analytic, creative, and practical tasks. In summary, this project systematically manipulates identification, instruction, and evaluation of gifted students to determine what would be gained by broadening identification procedures, teaching in ways that are or are not tailored to gifted students' particular patterns of abilities, and assessing the students' performance in ways that either do or do not address their particular strengths. Our main activity in Year 3 is to analyze the results of data on various tests and course assignments from YSPP, and to plan the 1993 summer program.

Motivation and Underachievement in Urban and Suburban Gifted Adolescents

The motivation project, led by Pamela R. Clinkenbeard, is a four year qualitative investigation that began in Year 2. The purpose of the study is to investigate factors that create or inhibit a "gifted" level of performance, both in those who have been identified as gifted and in those who have not. This project will address two important factors in the gap between potential and performance: motivation and disadvantage. We will describe in qualitative fashion the motivational patterns found in both suburban and economically disadvantaged urban classrooms of gifted preadolescents; we will extend this observation to regular classrooms in an attempt to determine the motivators of exceptional performance in those not identified as gifted. Motivation has emerged as an important factor in defining and explaining giftedness.

The primary activities of this project in the 1991-92 funding year were to build a literature database on motivation and the gifted, develop a literature review, conduct pilot classroom observations in a low income urban middle school gifted classroom, and refine the method of qualitative observation. The main thing that has been learned in the course of building the database and writing the literature review is that there is little actual data-based research focusing on motivation and the gifted. Electronic searches of psychology and education databases using the search term "motivation and gifted" yielded a number of articles, but most of them have turned out to be descriptions of activities or programs presumed to be motivational for gifted students. Another subgroup of these articles addresses current research on motivation and its implications for gifted education, but does not present any new data.

From the pilot observations, we refined the qualitative observational techniques to be used in the next year of the project, and affirmed that very high level products can be developed in very poor urban schools.

The main activity in Year 3 will be to observe two gifted classes, one suburban and one urban and economically disadvantaged. Expected knowledge includes some answers to these questions: Do suburban classrooms for gifted preadolescents reveal different motivational patterns from those in economically disadvantaged urban classrooms? Are motivational patterns of students identified as gifted different in kind and/or degree from motivational patterns of other students? Does the experience of being labelled "gifted" cause a shift in motivation related behavior?

Yale
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June 27 – July 24, 1993

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More Year 2 updates

An Investigation of Student Learning Outcomes: Results of a Program Satisfaction Survey

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What are the characteristics of effective school programs for high ability students? Investigations of cognitive and affective outcomes for gifted students have been reported in the literature (Cornell, Delcourt, Goldberg, & Bland, 1992; Feldhusen & Sayler, 1990; Goldring, 1990; Vaughn, Feldhusen, & Asher, 1991), however, these studies have not focused on the perceptions of school personnel, parents, and students across several types of programs.

We had available a national sample of third, fourth, and fifth grade students from four program arrangements: special schools, separate class programs, pull-out programs, and within class programs. Each type of program was represented by three or four school districts. All students had been in their respective programs for one year. The focus of the survey was to understand what impact members of the school community felt the program had on its clientele.

METHODOLOGY

Parallel forms of the survey were developed for students, parents, teachers of the gifted, program coordinators, and school principals. Survey questions for parents, teachers, and administrators addressed the areas of achievement, challenge, social development, self-concept, curriculum, communication about the program, and general attitudes concerning the program. Respondents were instructed to complete the survey about their particular program. Survey questions were worded to reflect the roles of the respondents. For example, parents were asked to assess the program's impact upon their own child, while teachers and administrators were asked to assess the impact of the program for both gifted and non-gifted students. Each of these survey versions consisted of seven to nine multiple choice items with four possible responses (i.e., very important, somewhat important, of little importance, not important) and one or two open-ended questions. The student version included four items about course content, challenge, enjoyment, and social relationships. Students responded to the questions by circling one of three choices: most of the time, sometimes, never.

The student sample was selected to include individuals who were identified as disadvantaged (receiving free or reduced price school lunch) and who represented diverse racial/ethnic groups. From a sample of 300 students, 43 were categorized as disadvantaged and 91 were non-Caucasian. The sample was selected from 57 schools across the four program types. All students and their parents were surveyed anonymously about the particular program operating in their school, as were the teachers of the gifted for each student, the program coordinator, and the school principal.

ANALYSIS

Parallel items across all four survey versions were analyzed; therefore, only items relating to course content, challenge, enjoyment, and social relationships are included in this report. Survey results were analyzed using a Chi-square procedure. These calculations were based on a comparison between the expected number of responses for each survey question and the actual responses across each program type. The .05 level of significance was employed interpreting these results.

STUDENT SURVEY RESULTS

1. When compared to responses from students in pull-out programs, separate classes, or special schools, students from within class programs reported less frequently that their programs presented them with new content or challenging work.
2. Students in special school programs reported significantly greater enjoyment of their relationships with peers in the gifted program than did students in separate class or within class programs.
3. Students in pull-out programs reported significantly greater enjoyment of their relationships with peers in the gifted program than did students in within class programs.

TEACHER/ADMINISTRATOR SURVEY RESULTS

Since no significant differences were found between teachers and administrators on any variable, these groups were combined.

1. Teachers and administrators in special schools and in schools with separate classes reported greater increases in student attitudes toward school, greater student achievement increases due to program participation, and greater increases in student self-confidence than did teachers and administrators in schools using pull-out or within class models.
2. Teachers and administrators among the four program types did not differ significantly in their perceptions of the level of challenge offered by their school's gifted program, nor did they differ in their perceptions of viewing their gifted program as an appropriate model for their students.

PARENT SURVEY RESULTS

1. Parents of children in separate class programs reported greater increases in student attitudes toward school than did parents of students in pull-out or within class model programs.
2. Parents of children in special schools, separate classes, and pull-out programs viewed the program as offering more challenging work than did the parents of children from within class programs.
3. Parents of children in separate class programs attributed greater achievement increases to participation in the gifted program than did parents with children from within class programs.
4. Parents of children in separate class programs reported greater gains in self-confidence due to participation in gifted programming than did parents with children in within class programs.
5. Parents of students who participated in homogeneously grouped instruction for the gifted at least part of the time (separate school, separate class, and pull-out programs) attributed greater achievement increases to participation in the gifted program and reported higher levels of self-confidence in their children than did parents of children who were in full time heterogeneously grouped classes (within class programs).
6. Parents with children attending within class programs were less likely to see these programs as beneficial as compared to parents with children in each of the other program types.

CONCLUSIONS

For this sample, parents, students, teachers, and administrators from the within class model for high ability students seemed less satisfied with the program than did individuals from districts employing other models. Since this survey focused on perceptions, these results are a product not only of what happens in the program, but the information individuals receive about it. As a follow-up investigation of parent attitudes, we examined their comments regarding the question, "Do you think this program has been beneficial for your child?" Parents of students in the heterogeneously grouped model were the most likely to respond that they did not know enough about their child's overall program. Teachers and administrators employing this design should be certain that their school personnel and parents are fully informed about how the curriculum is differentiated for the students and how the program operates. Content and design for all types of programming arrangements should be evaluated on a regular basis to ensure an appropriate fit with the students' needs. For additional information about classroom practices for high ability students and differentiating the curriculum for the gifted, refer to research by Westberg, Archambault, Dobyns, and Salvin (in press) and Reis and Purcell (in press), respectively. A review of evaluation techniques in gifted education can be found in an article by Tomlinson, Bland, and Moon (in press).

Each of the four programs in this study employed a different student grouping arrangement (special school, separate class, pull-out program, within class program). The models selected by each community were based on their philosophy and needs. While one type of program may be more beneficial for a particular child than another type, the way that the program is implemented determines its satisfaction rating, no matter the type of program.

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More Year 2 updates

Developments in Identification and Evaluation: Databases, New Instrument Development, and Promising Practices

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The University of Virginia site continues to examine identification and evaluation practices in gifted programs. This project, which is now entering its third and final year, has several components which are useful to practitioners. Best practices in identification and evaluation have been compiled to provide models on which new or revised programs can be based. Reliability and validity studies on promising local instruments are underway to broaden the range of assessments available, and a series of databases is being set up to allow easy access to current literature and practices in identification and evaluation.

Sixteen databases, each focusing on a different aspect of identification or program evaluation, have been established. The databases include annotated bibliographies about specific issues in gifted student identification (such as identifying LD/gifted students), about the use of standardized tests in identifying gifted students, and about aspects of program evaluation. Other databases include abstracts of published reviews of standardized tests used in identification and program evaluation, reviews based on the Scale for the Evaluation of Gifted Identification Instruments (SEGII) and the Scale for the Evaluation of Program Evaluation Instruments (SEPEI), NRC/GT developed scales, and copies of locally developed identification and evaluation instruments. The identification databases are currently accessible to the public. The evaluation databases will be available this spring. The NRC/GT is in the process of obtaining permission from local school divisions to release their locally developed identification and evaluation instruments, and these will be available as soon as permissions are granted.

During the second year of the project, attention focused on reviewing identification instruments. The files were read to ensure that we had as complete a list as possible of standardized tests in use for identification and that we had an accurate assessment of the locally developed instruments we hold. Instruments which are published and/or standardized were reviewed using the Scale for the Evaluation of Gifted Identification Instruments (SEGII) which assesses the reliability, validity, and utility of tests. Each test was reviewed separately for each gifted construct for which it was used. Unpublished instruments were reviewed on a more basic form which looked at the utility aspects of the instruments (e.g., age group and respondent) and asked only general questions about reliability and validity.

Another facet of this project is the identification of locally developed instruments for further study. One instrument showing promise in the identification of students gifted in science is the Diet Cola Science Abilities Test. It is not a multiple-choice test nor is it specific to a particular curriculum. It is open-ended, process-oriented, and requires students to apply their knowledge. Because it deals with experimental design, students must also show their ability to "do science." As they complete their design, students have the opportunity to demonstrate their competency in all of the basic and integrated process skills. Reliability was assessed initially since the consistency of the test scores needed to be established before any validity studies could be undertaken. Interrater reliability, intrarater reliability, equivalent forms reliability, and test-retest reliability were considered in the data collection for 1991-1992. Test sites were chosen from the list of Collaborative School Districts (CSDs) that expressed interest in participating in The National Research Center on the Gifted and Talented's reliability and validity studies in identification instruments. The results of the study show that the test is not gender or culturally biased. Because the reliability coefficients were sufficiently high, validity studies are currently underway.

We are also beginning reliability studies on two other locally developed instruments. One is a peer referral instrument that is used to identify Hispanic students. The other is being used to identify talent in young children. Results from both of these studies should be available this spring.

A recent publication of the NRC/GT at the University of Virginia is the monograph, *Contexts for Promise: Noteworthy Practices and Innovations in the Identification of Gifted Students*. This 200-page document features some of the best practices in gifted identification currently in use across the country today. The monograph is a culmination project of research examining the reliability and validity of identification processes in the nation's school systems. The contents of the monograph include eleven chapters describing a diverse selection of innovative practices written by educators currently involved in implementing new practices of identification. The cases highlighted represent exemplary models which other schools may use as a guide for developing methods suitable to their context, philosophy, and needs.

The sites for inclusion in the monograph were selected two years ago from the NRC/GT collection at the University of Virginia and from over 25 Javits projects. The cases were rated against criteria emphasizing defensible conceptions of a process to identify underserved gifted populations, models supported by the literature in gifted identification, and practices linking definitions of giftedness with instruments used and programs being implemented. A philosophy of inclusiveness is prevalent across the sites selected. There is an overall acceptance of intelligence as multifaceted and a pervasive theme of emphasizing students' development over time. The variety of innovative practices included in the monograph describe model programs for locating and serving very young gifted minorities, processes for recognizing talent in the arts, and non-traditional assessment techniques coordinating with gifted programs. *Contexts for Promise: Noteworthy Practices and Innovations in the Identification of Gifted Students* presents the case studies in order to challenge educators to seek gifted students in all populations in effective and appropriate ways.

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A Continuing Dilemma: High Ability Students With Learning Disabilities

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Storrs, CT

1881

In the last decade, much more attention has been given to the perplexing problem of high ability students who also have learning disabilities. Four books and dozens of articles have been written on this topic and still, problems exist with both identifying and providing special programs for this population. In addition to learning more about how to identify and serve this population, it is important to know how some high ability students with learning disabilities succeed in a university environment. To investigate this issue, The University of Connecticut site of The National Research Center on the Gifted and Talented implemented a study involving twelve young adults who succeeded in a post secondary academic environment, despite having a learning disability. Extensive interviews were conducted with both these young adults and with their parents. The interviews and a thorough review of available school records provide a fascinating portrait of the challenges and problems faced by high ability students with learning disabilities.

This article describes one of these students, Joe, a 21 year old junior who is a physics major at The University of Connecticut. Joe's school experiences are similar in many ways to a number of other participants in the study. He never really had to work in school because he learned quickly. His verbal IQ is over 150 and yet, he had problems in school that began at a very early age. In fact, he had so many learning problems in the primary grades that he was placed in a self-contained special education classroom from grades two through six. During his time in this self-contained classroom, Joe was instructed with students who were mentally challenged and who had specific learning disabilities. He became severely depressed. About this time in his education, he recalled: "It was degrading. I was very resentful of it. I don't really remember that part of my life that well. I've blocked it out. I knew I was different than the other kids." Joe was retained in fifth grade while in the self-contained special education class. He explained this by saying that he had become a disciplinary problem while he was in the classroom. Joe remembered with considerable anxiety incidents about his time in this class: "They used to send us out to recess with the mainstreamed kids. I remember being sort of alone and being made fun of. They called me retarded."

As the interview progressed, Joe recalled that school personnel released him from the special education class in sixth grade because they considered him "cured." He explains: "I was the first student to be completely mainstreamed out of the program in its history. The principal used to come down and observe me and they would bring visitors from here or there to talk to me."

Joe's mother was a dedicated advocate for him during all of his school experiences. She faced constant problems caused by her own confusion about how to help her son and the mixed messages provided by school personnel. In parent/teacher conferences, she was told year after year that Joe was so bright that maybe he would outgrow his learning problems. She sought help from private school psychologists and was a constant presence in Joe's life. She helped him with his homework, monitored his school progress, requested that his teachers modify his assignments, hired tutors, argued with the school district when he was placed in low level classes, and was there to request help and provide support. Through her later efforts, they located a university with a program for students with learning disabilities and supported Joe in all of his efforts.

After Joe was mainstreamed from his elementary self-contained special education class in sixth grade, he was given an IQ test. His scores were so high that school personnel considered him for the gifted program. Joe explains: "After my IQ test in grade six, they told me I had an IQ that made me eligible for the gifted program. So they gave me other tests (achievement tests) and told me that I didn't make it (the cut-off), but they told me not to feel bad because my learning disability caused me to score lower than normal people. So I would have made it had I not been learning disabled." Joe's mother corroborates his memories about his failure to be placed in the gifted program despite his very high IQ score. She relates her memory of the testing for placement in the program: "However, following the IQ test the school personnel told him 'Gee, sorry kid, you can't spell, you can't be gifted'." Joe's mother commented on this incident as one of the many times that both parents "responded strongly and negatively" toward the school.

The negative messages and constant mistakes made with Joe and others in this study made the interviewing process difficult, as it was often almost impossible to withhold judgment on the school personnel who so consistently erred with this group of students. Half of the twelve subjects in this study were retained one grade in school and all had repeated negative experiences due to the interaction of their ability and their learning disability.

"I am rather resentful of public education as a whole."

Because Joe had difficulty both with reading and with handwriting, he was consistently placed in low level classes where he did not have to study very hard at all in order to achieve Bs and Cs. During his secondary years, he attended school in a different district and his parents did not provide records that labeled him as having a learning disability. Joe's mother was not in favor of having the school personnel know that Joe had a learning disability because of the type of program in which he would be forced to participate. This program model was a self-contained class and Joe's previous experience had proven to him and his parents that this would not be challenging for him. Accordingly, in both mathematics and science, he was able to participate in advanced classes because his learning disability was not known and because he pursued with complete attention all possible avenues of entry to these advanced classes.

Because of his earlier negative elementary school experiences, no further services were requested from the public schools. In fact, when Joe's mother decided another assessment should be completed to qualify for admission to a college with a learning disability program, she sought help from outside the schools. Joe explains: "We did it privately. We were not going to do it from the schools because we all assumed if they knew I was learning disabled, I would be booted out of most of my advanced (math and science) classes."

At this point, Joe became extremely interested in physics because of the physics teacher he had during his junior year of high school. Joe loved physics and received an A+ in the class. "He gave me an A+ because in his words, I knew more than he did about the subject." When asked how he had learned so much, Joe responded: "I read books on physics. I've read *A Brief History of Time*, *Coming of Age in the Milky Way*, and others."

Joe was able to overcome a severe learning disability to delve into physics and read extremely complex topics. Although very involved in a university learning disabilities program, it is now questionable whether Joe will finish college as he is currently on academic probation due to courses he must take outside of his major area. Despite extremely high abilities, Joe carries a great deal of anger about what happened to him in school, particularly his elementary school years. "I am very resentful of my elementary school treatment. I am rather resentful of public education as a whole. I don't know how else I could feel, but I'm not mad at very many individuals." When asked if he can reverse his current situation, Joe responds: "Well, I'm working on it now. You see, I think I've finally gotten over a lot of the anger I had towards school, and I have begun to start studying. I have begun to be organized about my work."

Our research on high ability students with learning disabilities has provided a fascinating portrait of the issues that must be addressed if these young people are to realize their potential. The compensation strategies necessary for the students to succeed, the advocacy necessary from parents, teachers, and the students themselves, combined with conditions that enable these students to succeed are all described in the study which will be available from the NRC/GT in 1993.

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Identification of the Musically Talented Student: The Assessment of Musical Potential and Musical Performance

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There is a rising tide of interest in the performing arts within gifted education, and many questions arise concerning effective procedures for identifying students who are musically gifted. Defining criteria that reflect the behavioral characteristics and fundamental abilities of talented music students and describe the specific qualities of excellence in performance is essential in creating a valid identification procedure.

The musically gifted student is not only taught within the school environment, but also through private lessons, in specialized schools and summer programs for the performing arts, and in gifted arts programs. Teachers who work within these different areas can provide valuable information concerning suitable criteria because they assess the process of improved performance and the growth of talent on a daily basis. In addition, asking professional performers how they feel about musical potential and assessment of performance can provide a perspective from an artist's viewpoint.

This study began with an analysis of identification instruments that were sent to The National Research Center on the Gifted and Talented at the University of Virginia. This analysis established a representative starting point of the criteria used nationally to identify musical talent within gifted programs. Additional audition forms and admission procedures were collected from performing arts schools, Governor's School programs, and music teacher organizations, in order to compare criteria used to assess performance and identification of talent within the specialized discipline of music.

The analysis of identification instruments revealed that procedures vary according to the availability of specific programming for those identified as musically gifted. Basic teacher checklists and rating scales begin the process, with some procedures offering a broader base of scales filled out by the student, peers, and parents. If programming is offered, this initial stage is followed by an informal interview and more specialized rating scales filled out by the music teacher. An assessment of musical performance is a common element in identification, usually done by an audition or by an informal performance experience evaluated by specialists within the field of music.

The analysis indicated that testing of music aptitude is not part of the normal procedure for identification. Gordon's *Primary Measures of Music Audiation* (1979) tests which discriminate low and average music aptitude were used in a few identification procedures sent to the NRC/GT. The *Intermediate Measures of Music Audiation* (1982), designed to discriminate and measure "music aptitudes of children with high music aptitudes" from ages 6-9 (Gordon, 1987, p. 120-121), were not included in any of the identification procedures.

A survey form was developed from the analysis of identification and audition instruments which contained lists of characteristics to assess musical potential and performance. Each list contained a five point scale from 1.00 (of no importance) to 5.00 (absolutely essential). The survey form also included checklists of representative identification procedures, as well as specific performance procedures used in auditions.

The survey was distributed to private music teachers, music teachers within the public schools, administrators and/or teachers in performing arts schools and summer programs, specialists within performing arts/gifted education, and professional performing musicians. A total of 121 surveys were completed, representing 23 different states. Only 13 gifted specialists completed the survey, with five of these gifted specialists returning blank forms, explaining a lack of an identification process or program within the performing arts in their school area.

Assessment of Musical Potential

The chart below contains characteristics in the Musical Potential Rating Scale of the survey together with the survey group mean results.

Musical Potential Rating Scale	**Group Means**
+1. *Shows a sustained interest in music and performing*	*4.35*
2. *Is self-disciplined*	*4.25*
* +3. *Responds discriminately to rhythm, melody, harmony*	*4.22*
* +4. *Can perceive fine differences in musical tone (pitch, loudness, timbre)*	*4.17*
5. Shows commitment in arts area	3.87
6. Can sing in tune well	3.81
7. Is self critical; sets high standards	3.81
8. Shows sensitivity to aesthetic elements of music, mood, style	3.81
*+9. Remembers and reproduces melodies with ease and accuracy	3.75
10. Can express emotions through sound or music	3.70
*11. Has a high degree of tonal memory	3.68
12. Is highly creative	3.56
13. Shows confidence in performing	3.54
14. Enjoys moving to rhythms and music	3.43
15. Evokes emotional responses from audience	3.31
* +16. Can identify a variety of sounds heard at a given moment	3.28
17. Is gifted in academic areas	2.92

The characteristics in *italic* print indicate those that were areas considered important (4) to absolutely essential (5). Those with an asterisk (*) are elements that music psychologists recognize as definitive of *music aptitude*. The characteristics with a (+) are found within the *Scales for Rating the Behavioral Characteristics of Superior Students* (SRBCSS) by Renzulli, Smith, White, Callahan, and Hartman (1976), a rating scale used in many general identification procedures.

It is of interest that the two highest rated characteristics dealt with general behavior rather than specific musical behavior.

The characteristic of *sustained interest*, found within the **SRBCSS** as noted above, was found on a majority of the instruments studied. The results of a one-way analysis of variance paired contrast statistical procedure showed that the characteristic of *self-discipline* showed a significant contrast ($p<.05$) between those teachers working in more specialized performing arts settings (private teachers, performing arts schools, performers) and those within the normal school setting (gifted specialists, music teachers). This may be a characteristic to explore in the development of future identification instruments.

The next characteristics listed are more music specific than the former. *Responding to rhythm discriminately* is found within the **SRBCSS** scales. The musical behavior of responding to a fuller range of musical qualities *(rhythm, melody, harmony)* merges perceptual listening to student performance. The ability *to perceive fine differences* in music is the basic measurement component used in Edwin Gordon's tests of musical aptitude: *PMMA* (1979), *IMMA* (1982), *MAP* (1965). This characteristic is also found in the **SRBCSS** scales mentioned above.

The characteristic of being *gifted in academic areas* had the lowest mean, 2.92, indicating it is rated not necessary (2) to helpful (3). The survey results regarding *academic giftedness* should be noted with interest by individuals who organize programs in the performing arts. By requiring an academic test score level as an entrance requirement to programs for the musically talented, we are identifying the academically gifted who are musicians, and possibly omitting the students who can be recognized for their musical talent, regardless of academic test records.

Assessment of Musical Performance

Some type of performance audition is normally part of any selection process within the performing arts. Analysis within this study indicates that audition forms and procedures vary greatly, and are usually locally devised.

The following characteristics for assessing musical performance contain criteria commonly found within audition and adjudication forms for musical performance:

Musical Performance Rating Scale	Group Means
1. Pitch/note accuracy	*4.73*
2. Rhythmic accuracy	*4.65*
3. Steady rhythmic pulse	*4.41*
4. Dynamic contrasts	*4.05*
5. Technical fluency	*4.01*
6. Appropriate tempo	3.96
7. Sensitivity to mood	3.96
8. Tonal color	3.75
9. Detailed articulation/bowing	3.72
10. Creativity in interpretation	3.68
11. Stylistic awareness	3.68
12. Confident memory	3.54
13. Poised stage presence	3.48
14. Originality	3.04

The *italic-face* characteristics are those rated as *important* (4) to *absolutely essential* (5) by the music teachers/performers. They indicated that a performance should be *accurate, rhythmically steady and precise*, with *dynamic contrast*, and performed with *technical fluency.*

The characteristic that received the lowest rating was *originality* (3.04). This may be explained by the lack of experience assessing improvisatory type of performances within music auditions. Musical training emphasizes technical facility and usually consists of performance from a score rather than composition or improvisation. This should spark the interest of teachers within gifted education, where creativity is a vital element in teaching and identification. Nurturing creative experiences within music may be a unique contribution that music programs within gifted education can offer talented music students.

A one-way analysis of variance paired contrast statistical procedure showed significant contrasts ($p<.05$) between the performer/private teachers who work outside the school setting and the performing arts/gifted/music teachers and specialists who work within the school setting in *every* area of the scale. What do these differences tell us about the assessment of musical performance?

Measurement experts agree that musical performance, by its very nature, is inherently subjective (Boyle & Radocy, 1987). Boyle and Radocy (1987) and Warnick (1985) agree that there is a great need of research in the area of musical performance to "improve the reliability and validity of performance appraisal" (Warnick, 1985, p. 40). The different responses to the assessment survey represent teachers who work with varied levels of performance within their teaching, and who each have a subjective idea of what a quality performance entails. This survey has gathered criteria that may assist in building a reliable and valid assessment instrument for performance.

The current study will expand on the ideas gleaned from the survey and the numerous comments received on the forms through interviews with persons within each representative group. By gathering valuable opinions and by further clarifying criteria from teachers/performers within all these different settings, hopefully, we can break new ground in building reliable identification procedures that will uncover potential musical talent and develop meaningful programs that nurture the creativity within these gifted musicians.

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Commentary

"But you're a man!!!"
Exploring the role of identification in role model and/or mentor relationships

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Justice will not come to Athens until those who are not injured are as indignant as those who are injured. –Thucydides

I once told Barbara Kerr that after my gender equity workshops, people often remark, "That was good, but too bad a man had to do it." Dr. Kerr immediately replied, "Ah, and you're a man. The gender of the messenger isn't important - it's that you're doing it that matters." As 78% of math and science teachers in the public secondary schools are male, one would hope that they (and others who work with diverse populations) take the advice of Thucydides and Dr. Kerr and try to make a difference in the life of their students, even if their physical characteristics are not the same.

However, this attitude is not shared by all educators. During my preparation for a recent workshop on female participation and performance in science and math, a friend questioned whether I had bothered to get a woman's point of view. Explicitly, she had merely suggested that my presentation be comprehensive. Implicitly, however, her tone indicated that she was questioning whether the forces of socialization and gender stereotyping that women constantly encounter are beyond a man's understanding. I began to wonder if a male could be an effective "provider of guidance and awareness" (e.g., communicator, advocate, role model, mentor).

Although her comments were specific with respect to gender equity issues, my friend actually had raised an important, more global question: To what degree should an advocate, role model, or mentor's physical and intellectual characteristics match that of the person with whom they are working? The answer carries implications for people in a variety of fields, especially those who are attempting to serve as role models and advocates for other underachievers and/or provide equal educational opportunities to other special populations (e.g., learning disabled, high potential, minority). Since no theoretical explanation of role model/mentor identification processes exists in the literature, an exploration of the topic follows.

The central issue appears to be one of identification, as it pertains to locating an individual from whom you can receive advice, guidance, and inspiration. This process is popularly referred to as "finding someone whom you can relate to," due in part to an attractive physical and/or a personality trait, shared experience, or other characteristic. For example, Charles, a student with learning disabilities, frequently stopped by after school to work with me. I became his mentor and friend, helping him develop his strengths by learning how to transfer his wonderful ideas into real products. Charles' reactions can be analyzed at two levels: an obvious, visual level, which would involve those characteristics and experiences associated with physical manifestations (i.e., race, ethnicity, gender, age); and an internal, less conspicuous level, which deals more with emotions, interests, compassion for the individual, and other, sometimes hidden facets of personality and cognition. At the visual level, Charles had other male teachers that year, so a common gender could not have been the only factor. But at the internal level, our common love of thinking and my belief in his abilities (internal level characteristics) was enough to overcome our lack of strong, visual (and some internal) level commonalities. In this way, our relationship, based more upon internal than visual level characteristics, rested upon a strong foundation.

This proposed process is illustrated more formally in Figure 1. Once the process of attempting to find and identify with a provider of guidance or awareness is initiated, the individual conducting the search will ascertain whether potential providers exhibit any visual characteristics with which the individual can identify. If not, the search will continue, unless the provider's internal characteristics are evident and attractive (the dashed arrow). If the provider has attractive visual characteristics, then an initial, superficial relationship may form while the individual investigates the provider's internal characteristics. If the provider has attractive internal characteristics, a potentially long-lasting, effective relationship may form. However, a lack of attractive, internal characteristics will cause the individual to restart the identification process. The criteria for determining what constitutes an attractive, internal characteristic in a provider of guidance will vary with each individual, although studies of traits found to be desirable in professionals who work with talented children (Clark, 1983) suggest that several characteristics are generally desirable (i.e., high motivation, enthusiasm, compassion).

Some visual level characteristics co-exist with traits at the internal level that have been shaped by discrimination and stereotyping towards the visual characteristics. For example, my above-mentioned friend questioned whether a man is capable of understanding the forces of socialization and gender stereotyping that women constantly encounter. While I will not argue that some males encounter these same forces (I will save that for another article), the importance of compassion and an informed *understanding* of socialization forces should not be underestimated. Some of the research cited in Clark (1983) suggests that a hierarchy of internal characteristics may exist (based upon the traits' attractiveness to the individual), with the affective ranking higher in order of importance than the cognitive traits. In this way, an obvious sense of concern for the individual's well-being may be more important during this identification process than familiarity with the experience of discrimination and stereotyping. After all, a disgruntled, female scientist talking only of bad experiences would not be the first choice to sit on a panel discussing opportunities for women in science and math, even though she obviously understands the forces of discrimination and socialization that women face.

Thinking back to a more historical example, I remember periods of my childhood when, not unlike other children, I bombarded my parents with cries of "You just don't understand!" and threatened to run away to the circus and live with the monkeys and clowns (whom I assumed could have understood me better). My parents could have chosen to believe that since they had no experience at raising a child, their attempts to be my advocates and role models were futile. At the visual level, their feelings would have been correct: I did not identify with my parents, choosing to admire other children who were my own age and with whom I had common interests. As I grew up, however, I eventually identified with my parents' interests at the internal level: Their concern for my well-being (i.e., compassion), my father's love of science and sports, and my mother's passion for math and writing. As such, they have had a large influence on my most crucial decisions and, therefore, my life.

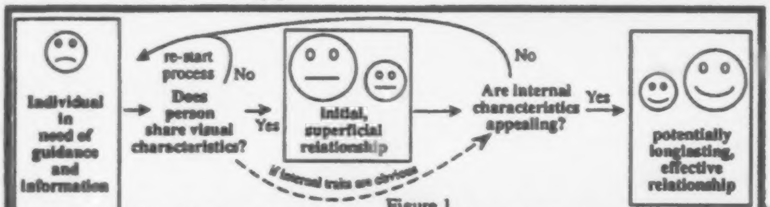
Individual in need of guidance and information
Does person share visual characteristics?
re-start process
No
Yes
Initial, superficial relationship
Are internal characteristics appealing?
No
Yes
if internal traits are obvious
potentially longlasting, effective relationship

Figure 1
Possible interactions with a potential provider of guidance or awareness

Research on the effectiveness of advocates who do not share the physical characteristics of the population with whom they work is scarce. Inferences can be made, however, from studies of people who effectively participate in the effort to increase the participation and performance of women in math and the sciences. For example, Casserly (1979), in a study of high school science and math programs that "attract and hold high proportions of girls" (p. 346), found that AP math and science teachers were excellent recruiters and counselors for both male and female students, without specifying the gender of the teacher. Koballa (1988), in a study of high school females, determined which "communicators" and corresponding attributes were "perceive[d] as highly credible regarding reasons for taking elective physical science courses in high school" (p. 465). While women were identified more frequently as being credible, almost 30% of the credible communicators were adult males. Personal characteristics attributed to the credible communicators showed an emphasis on prestige, trustworthiness, and similar interests and beliefs. Identification due to these attributes would occur at the internal level, so that the gender of the role model would not necessarily have an adverse effect upon recruitment and education of potential achievers. My experiences with counseling young women have been successful because of shared beliefs in their abilities and interests, not because of a common gender.

A potential role model and/or advocate for a special population of underachievers will be most likely to attract the attention of students if they can relate to him or her through some characteristic at the visual level. An effective, long-lasting relationship, however, needs to be rooted at the internal level, where outward, physical appearances, labels, and abilities are less important than personality, interests, and attitudes. While people who share characteristics with students at the visual identification level have been shown to be effective role models, ascertaining that visual identification is necessary and/or sufficient for successful intervention is a misinterpretation of the research data. For while visual characteristics call attention to a prospective provider of guidance or awareness, identification with his or her internal characteristics ultimately determines the effectiveness of the relationship. For example, male science teachers should be encouraged to actively and enthusiastically recruit female students into taking science and math classes. Once there, a female student may identify with the teachers' passion for the topic, leading to a reversal of the female underachievement pattern in the quantitative disciplines.

If this proposed model is valid, then certain questions will be raised in the minds of educators: When trying to locate role models, mentors, and advocates for children, to what extent are shared physical characteristics important? Should a preference be given to those individuals with whom the children share physical characteristics or individuals who have attractive internal traits? Are visual characteristics necessary at all? And are there certain situations (e.g., when working with certain populations) when the visual traits of an advocate or role model are not as important when attempting to establish a relationship with children? Persons attempting to locate individuals to work with children as role models and mentors need to answer these questions, among others, in order to initiate effective, long-lasting relationships.

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The National Research Center on the Gifted and Talented

Newsletter

Spring 1993

The University of Connecticut • The University of Georgia • The University of Virginia • Yale University

Collaborative Researchers and Writers Wanted for the NRC/GT

E. Jean Gubbins
The University of Connecticut
Storrs, CT

Our proposal for Year 4 (1993-94) of The National Research Center on the Gifted and Talented has been submitted to the United States Department of Education, Office of Educational Research and Improvement, and we are reviewing the scope of our work that will reach its conclusion in May 1995. As all of you know, the NRC/GT is funded by the Jacob K. Javits legislation. The priority of the Javits Act follows:

> ***The identification of gifted and talented students who may not be identified through traditional assessment methods (including economically disadvantaged individuals, individuals of limited English proficiency, and individuals with handicaps) and to education programs designed to include gifted and talented students from such groups.***

All of the research that we implement is based on this priority and the results of our National Research Needs Assessment Survey. We are involved in 20 research studies to date that have been highlighted in our newsletters. We have also commissioned papers for our *Research-Based Decision Making Series* on topics and issues that are pertinent to the future directions of gifted and talented education. To ensure that we are addressing as many issues as possible and representing the multiple viewpoints of practitioners and researchers, we would like to once again ask for your involvement with our work.

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Washington, DC

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(Continued from page 1)

There are three ways that you can become more involved in the NRC/GT projects. The first is through Collaborative Research Studies, the second is the *Research-Based Decision Making Series*, and the third is through the *NRC/GT Newsletter*. Each of the projects will be highlighted for your consideration.

Collaborative Research Studies

At the American Educational Research Association Conference in April 1992, we initiated Collaborative Research Studies with our Consultant Bank members. Several studies are in progress and others are welcomed. Collaborative researchers have access to other researchers in our Consultant Bank, and they have the opportunity to conduct their research with our Collaborative School District network. If you are interested in pursuing a research project, please submit a letter of intent, a three page synopsis of your proposed project, and a vita. The synopsis should address the Javits priority and one or more of the recommendations of the National Research Needs Assessment Survey. The research recommendations from the Needs Assessment Survey were in the *NRC/GT Newsletter* (June 1991) and the monograph entitled, *Setting an Agenda: Research Priorities for the Gifted and Talented Through the Year 2000*. The recommendations include a need for studies on program effectiveness, motivation, teacher training, curriculum modifications, and underachievement.

Your submission for the Collaborative Research Study will be reviewed by the NRC/GT staff, and we will determine the resources that will be made available to you if you project is accepted. The resources may include research sites, co-researchers, and possibly a small honorarium to cover expenses.

The Research-Based Decision Making Series

The second project that may be of interest to you is becoming involved as a writer for our *Research-Based Decision Making Series*. The series provides practitioners with research-based information that has direct implications for identification, teaching practices, program organization and development, and policy development. Thus far these papers have focused on ability grouping, cooperative learning, self-concept, arts identification, television and kids, creativity, reading, and evaluation. Topics for other papers that are in various stages of completion include: college preparation, science, mathematics, counseling, and underachievement, to name a few. If you are interested in preparing a paper for the *Research-Based Decision Making Series*, please submit a letter of intent, a three page synopsis, vita, and a writing sample of an article that has practitioners as the major audience. The synopsis will be reviewed by the NRC/GT staff for relevance to the Javits legislation and the potential impact of the research-based information for policy makers.

The NRC/GT Newsletter

The third project also involves writing. We have encouraged people in the past to contribute to the *NRC/GT Newsletter*, and we have received some excellent materials for the following sections:

- **Commentary**

  Articles for the Commentary section should be approximately 1,000 words. The articles should focus on research issues, curriculum development projects, identification strategies, or evaluation techniques.

  The Commentary section could also be a review of books, journal articles, or audio-visual training materials.

- **Research In Progress or Recent Research**

  Abstracts of approximately 200 words describing research projects in progress or recently completed research are requested. You should encourage readers to contact you for follow-up information or use the abstract as an opportunity to find out if other researchers are pursuing hypotheses along similar lines.

- **Just Off the Press**

  Articles of approximately 500 words should highlight books, articles, and research reports that translate research findings into practice.

We are pleased with the response to our publications and hope that more people will become involved in the work of the NRC/GT.

New Districts Involved With the NRC/GT

Flagstaff Unified Schools #1
Flagstaff, AZ

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Quincy, MI

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Tacoma Schools
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Teachers' Attitudes Toward Curriculum Compacting: A Comparison of Different Inservice Strategies

Marcia Boatright Imbeau
The University of Arkansas at Fayetteville
Fayetteville, AR

High ability students frequently spend time in school completing assignments they have already learned because teachers too often follow an outline prescribed by textbooks without regard to students' capabilities or previous mastery. Curriculum compacting exists to assist teachers with a strategy to provide students with an appropriate and challenging curriculum. The purpose of this recent research was to determine the combination of teacher variables and staff development strategies that influence teachers' use of curriculum compacting. Teachers' attitudes toward making curricular modifications was the dependent measure in the study. The influence of the years of teaching experience, graduate gifted education credits, and training with follow-up activities was also examined.

A quasi-experimental design (non-equivalent control group) was used to examine three different treatment groups and one control group of teachers. One hundred and sixty-six teachers representing grade levels 1-12 within a large, urban school district comprised the sample. Teachers in the control group did not receive any training or follow-up assistance. Teachers in the treatment groups received a full day of inservice training by the researcher and different types of follow-up assistance during the second semester of the school year. Follow-up assistance involved contact with the researcher to provide technical assistance and encouragement for Group 1, teacher to teacher coaching (peer coaching) for Group 2, and district program specialists coaching (district coach) for Group 3.

Statistical analyses were used to examine the manner and the degree to which the following variables affect teachers' attitudes toward curriculum compacting:

- number of years teaching experience,
- number of graduate gifted education credits,
- ratings of compactors,
- pretest attitude scores, and
- group membership.

The results indicated that peer coaching (Group 2) had a positive affect on teachers' attitudes toward making curriculum modifications.

National attention is focused on providing early identification and authentic assessment in primary classrooms.

So is this conference.

The Nebraska Project announces a national training and dissemination conference to help achieve the project's goal: to effect fundamental change at the classroom level in the way primary classroom teachers participate in the early identification of able and creative students.

If you are a

- gifted specialist;
- teacher;
- school administrator;
- teacher educator;
- researcher;
- school board member; or
- parent or classroom volunteer;

and if you are curious or concerned about two of the most talked about topics in education today—developmentally appropriate practice and authentic assessment—you should plan to participate.

Nebraska Project

The Nebraska Project is funded by the U.S. Department of Education, Jacob K. Javits Gifted and Talented Students Education Program. Its special focus is the early identification of able and creative children from underserved populations.

Early Identification and Education of High-Ability Learners: With Potential in Mind

- **Sept. 30 to Oct. 2, 1993, in Lincoln, NE**
- Sponsored by the Nebraska Project and the Nebraska Association for the Gifted.
- For more information, call the University of Nebraska–Lincoln Department of Conferences and Institutes, (402) 472-2844, or send a fax to (402) 472-9688.

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NEWS briefs

The Winter, 1993 issue of the *Journal for Education of the Gifted* is a special issue devoted to major research studies carried out by the NRC/GT. Since this journal is only mailed to persons who are members of the TAG Division of the Council for Exceptional Children, many individuals who are interested in the work of The Center probably have not obtained a copy.

If you are interested in ordering this special issue, featuring the latest research from the NRC/GT, or other back issues of the *Journal*, send $11 (add $1.50 per copy for addresses outside the U.S.) to Journals Department, UNC Press, P.O. Box 2288, Chapel Hill, NC 27515-2288. Prepayment must accompany all orders.

The NRC/GT also has a small quantity of this issue. Please contact our Dissemination Coordinator, Dawn Guenther (phone 203-486-4676 or fax 203-486-2900) for information about how you can obtain a copy.

• • •

David Kenny, who served as a principal investigator on the recently completed NRC/GT cooperative learning study, has claimed international fame for the quotability of his research writings, according to The University of Connecticut publication *UConn Advance*. The publication noted that the Institute for Scientific Information (ISI), an organization which counts and maintains records of citations or references in all science fields, says the Connecticut psychology professor was the world's third most frequently cited psychologist during the reporting period of 1986-90. Kenny recently presented his preliminary findings from the NRC/GT study on the impact of cooperative learning groups on gifted students at the American Educational Research Association's annual convention in Atlanta.

A new computer bulletin board on gifted education, edited by Mary Ruth Coleman, has been started as a part of SpecialNet. SpecialNet is an electronic bulletin board service with over 40 boards and 6500 members. The gifted education section has been operational since last September and includes:

- *timely information on advocacy issues*
- *ideas for meeting student needs*
- *announcements from national and state organizations*
- *updates on important research*
- *a link with others in the field of gifted education.*

If you have information which you would like announced on the gifted bulletin board, contact Mary Ruth Coleman, Associate Director, Gifted Education Policy Studies Program, NationsBank Plaza, Suite 300, Chapel Hill, NC 27514, phone 919-962-7373, fax 919-962-7328. If you are not a member of SpecialNet and are interested in more information about the service, contact GTE Directories, Education Services, P.O. Box 619810, Dallas, TX 75261-9955, phone 800-927-3000.

• • •

The National Research Center on the Gifted and Talented is beginning a new column in this newsletter. The column will feature strategies that have really "clicked" with high ability students and/or have garnered support for programs for gifted students from teachers, parents, administrators, or school board members. Submissions should be less than 100 words, will need to have been practiced successfully "in the field," and will appear with the name and state of the submitter. Share your most successful practices with people in the field and help others recreate your successful experiences. Ideas should be submitted to Jeanne Purcell, The National Research Center on the Gifted and Talented, The University of Connecticut, 362 Fairfield Road, U-7, Storrs, CT 06269-2007. Please include your name, address and phone number with your submission.

• • •

Western Michigan University will be conducting its second annual CREATE and PDK Evaluation Institute from June 19-24 at the Radisson Plaza Hotel in Kalamazoo, MI. This year the Institute will focus on skill development in the analysis, adaptation, and implementation of evaluation models. The program is relevant for teachers, administrators, researchers and evaluators who work with and assist school personnel in the development and application of personnel evaluation models. For more information, contact Kathy Hueser at 616-387-5895.

products from NRC/GT

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The Teaching of Thinking Skills in the Regular Classroom: A Six-Phase Model for Curriculum Development and Instruction
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Resource Booklets

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Setting an Agenda: Research Priorities for the Gifted and Talented Through the Year 2000
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(all papers may be reproduced)

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by Dr. Robert D. Hoge and Dr. Joseph S. Renzulli
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Commentary

Thinking Skills in the Regular Classroom

Deborah E. Burns
The University of Connecticut
Storrs, CT

The focus for all of the research studies that are being conducted with The University of Connecticut is on educational practices for talent development and gifted education within the regular classroom. The literature that we have reviewed suggests that *general intellectual ability* is a major factor that affects talent development in all students. It is our belief that improvements in *higher level thinking skills* will also improve students' general intellectual ability.

In a longitudinal study now being conducted by The National Research Center, experimental lessons are being piloted to improve students higher level thinking skills. It is hoped that through the aid of skilled practitioners and with the use of the experimental lessons, students will raise their academic achievement levels and their ability to transfer these skills to real world problem solving and interest-based research projects.

We are attempting to develop and nurture talent in our underserved student population with a two part intervention– thinking skills instruction to improve general intellectual ability and the use of interest-based enrichment options to help students identify their individual strengths and talent areas. Both interventions will take place in the regular classroom with students who represent the priorities of the Javits Act.

We hope students will find that the opportunity to explore their interest areas and to conduct real world problem solving projects will result in multiple benefits. By mentoring students as they conduct projects and investigations, we hope to show them how to develop their knowledge base, their task commitment, and their creativity as well as showing them how to transfer and apply learned thinking skills to real world problems– behaviors that we believe are the hallmarks of giftedness.

We have also concluded that *direct and explicit* instruction in thinking skills is a powerful strategy for helping novice problem solvers improve their cognitive abilities. Our review of the literature suggests that many students have difficulties with several of the higher level thinking skills. Many students jump to hasty conclusions, exhibit dogmatic behavior and are overreliant on the teacher for the "right" answer. Others have difficulty with the analytical thinking skills that are so important for academic achievement.

Bob Doran is featured here working with students on an observation activity during a recent NRC/GT satellite broadcast on thinking skills.

Our literature search has identified *three different approaches* for the direct instruction of thinking skills. These three approaches can be classified as the "stand alone," "content immersion," and the "imbedded instruction" approaches.

The "stand alone" approach focuses the students' attention on the name and nature of the skill, the importance of the skill in varied settings, strategies for using the skill, and dispositions related to the skill. These "stand alone" programs and lessons concentrate on improving one skill at a time and are not overly concerned with skill transfer or the content that is used as the vehicle for practicing the skill.

When teachers use the "stand alone" approach they report that students often have difficulty transferring and applying the learned thinking skills if no additional instruction is offered.

The "content immersion" approach favors the increased use of higher level thinking skills when students are learning new academic content. The teacher's role is to prompt students to transfer and apply thinking skills as a means of more easily acquiring this academic content.

When teachers use the "content immersion" approach they report that some students cannot apply the higher level thinking skills to sophisticated and challenging content because they have not yet learned how to use the specific skills that they are expected to use to acquire this new content.

With the "imbedded instruction" approach to direct instruction, students are exposed to real world or academic problems that require the use of multiple thinking skills. As students attempt to solve these problems they must use the numerous thinking skills that are imbedded within the problem and its solution.

When teachers used the "imbedded instruction" approach, they report that some students become confused and frustrated because they do not know how to use the various thinking skills that are required to solve the problem, or that they become confused in trying to learn too many new skills and too much new content at the same time.

We have concluded that all three approaches for direct instruction have their strengths and their weaknesses and no *one* of these three approaches can meet all of our expectations for an effective thinking skills program. This is why we have developed a thinking skills model. Students need to learn the names and definitions of the various thinking skills if they are to improve their metacognition and their ability to communicate their thought processes. They also need to develop or be taught a successful strategy for using a specific thinking skill if they are having difficulty using the skill with their present approach. Novice problem solvers need modeling and coaching from their teacher to improve their own abilities, and they need to learn how to transfer a learned skill to new content and new problems. They need to develop numerous thinking skills and they need to be able to autonomously transfer these skills and to discern opportunities for the application of these learned skills. They need to feel efficacious about their ability to use these skills, and they need to believe that although thinking is hard work, it is worth it in the long run.

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Commentary

An Analysis of the Research on Ability Grouping

James A. Kulik
The University of Michigan
Ann Arbor, Michigan

Educational researchers formulated the basic questions about ability grouping decades ago. Does anyone benefit from grouping? Who benefits most? Is anyone harmed? How? How much? Why? But after more than a half-century of analysis and interpretation, reviewers of the research findings have still not reached agreement on the answers. For every research reviewer who has concluded that grouping is *helpful*, there is another who has concluded that it is *harmful*.

Today, however, researchers are using statistical methods to organize and interpret the research literature on grouping, and they are more hopeful than ever before of coming to a consensus on what the research says. Glass (1976) coined the term *meta-analysis* for this statistical approach to literature reviews. Researchers who carry out a meta-analysis locate studies of an issue by clearly specified procedures, code outcomes and features of the studies on quantitative scales, and use statistical techniques to relate characteristics of studies to outcomes. The approach yields reliable and precise summaries of large bodies of research.

Two major sets of meta-analyses on research findings on grouping have been completed, one set at the University of Michigan (e.g., J. Kulik & Kulik, 1991) and the other at Johns Hopkins University (Slavin, 1987, 1990). The two sets of meta-analyses together examine findings from five kinds of grouping programs:

1. *XYZ classes.* School personnel assign students by aptitude to classes (e.g., high, middle, and low classes), and the classes are instructed in separate rooms either for a full day or for a single subject. Highly similar or identical curricular materials are usually used in all classes at the same grade level.

2. *Cross-grade grouping.* Children from several grades who are at the same level of achievement in a subject are formed into groups, and the groups are then taught the subject in separate classrooms without regard to the children's regular grade placement. Different curricular materials are thus used with same-age students who are at different aptitude levels.

3. *Within-class grouping.* A teacher forms ability groups within a single classroom and provides each group with instruction appropriate to its level of aptitude. The teacher usually uses different rates of instruction and different instructional materials for the within-class groups.

4. *Accelerated classes.* Students who are unusually high in academic aptitude receive instruction that allows them to proceed more rapidly through their schooling or to finish schooling at an earlier age than other students. The curriculum is clearly adapted to the higher aptitude level of students in these programs.

5. *Enriched classes.* Students who are unusually high in aptitude receive richer, more varied educational experiences than would be available to them in regular classes. Like accelerated programs, these enriched classes provide a curriculum that is specially tailored to students of higher aptitude levels.

Findings from the Michigan and Johns Hopkins meta-analyses agree quite well, but overall conclusions of the two research teams differ. The Michigan team found no clear effects of grouping in some programs, moderate positive benefits in others, and large positive benefits in still others. Hopkins researchers found moderate positive benefits from some grouping programs and no negative or positive effects from others. The difference in conclusions seems to stem from differences in the scope of the Michigan and Hopkins analyses. The Michigan analysts concluded that the strongest benefits from grouping were found in programs in which there was a great deal of adjustment of curriculum for highly talented learners. The Hopkins meta-analysts did not find any strong positive effects of grouping, but they also did not examine grouping programs designed for highly talented students.

A careful re-analysis of findings from all the studies included in the two sets of meta-analyses confirmed that higher aptitude students usually benefit academically from ability grouping. The academic benefits are positive but usually small when the grouping is done as a part of a broader program for students of all abilities. For example, XYZ grouping, in which little or no effort is made to adjust curriculum to the ability level of the classes, raise the test scores of higher ability students by about 0.1 standard deviations, or by about 1 month on a grade-equivalent scale. Within-class and cross-grade programs, which entail moderate amounts of curricular adjustment, boost test scores of higher aptitude students by about 0.2 to 0.3 standard deviations, or by 2 to 3 months on a grade-equivalent scale.

Benefits are larger in special classes for higher aptitude learners. Gains on standardized tests are especially large when the programs entail acceleration of instruction. Classes in which talented children cover four grades in three years, for example, usually boost achievement levels a good deal. Test scores of children accelerated in this fashion are about one year higher on a grade-equivalent scale than they would be if the children were not accelerated. Enriched classes, in which students have a varied educational experience, raise test scores by more moderate amounts. The average gain from such classes is 4 months on the grade-equivalent scales of typical standardized tests. Although smaller than the gains from accelerated classes, gains of this size are still impressive because in many enriched classes students spend as much as half their time on cultural material (e.g., foreign languages, music, art) that is not directly tested on standard achievement tests.

The re-analysis also showed that grouping has less influence on the school work of middle and lower aptitude learners. XYZ classes, for example, have virtually no effect on the achievement of such students. Test scores of middle and lower aptitude students taught in XYZ classes are indistinguishable from test scores of similar students in mixed classes. Cross-grade and within-class programs, however, usually raise test scores of middle and lower aptitude pupils by between 0.2 and 0.3 standard deviations. The adjustment of curriculum to pupil ability in within-class and cross-grade programs may be the key.

Evidence was less clear on the noncognitive outcomes of grouping programs. One conclusion is that grouping programs usually have only small effects on student self-esteem. The programs certainly do not lead talented students to become self-satisfied and smug, nor do they cause a precipitous drop in the self-esteem of lower aptitude students. If anything, XYZ grouping may have effects in the opposite direction. XYZ programs may cause quick learners to lose a little of their self-assurance, and they may cause slower learners to gain some badly needed self-confidence. The available literature also suggests that grouping programs may have some program-specific effects in noncognitive areas. For example, a few programs of accelerated instruction clearly have an effect on the vocational plans of youngsters; other programs of acceleration have no consistent effect.

These conclusions are obviously different from the well-known conclusions reached by Oakes (1985) in her book *Keeping Track*. According to Oakes, students in the top tracks gain nothing from grouping and other students suffer clear and consistent disadvantages, including loss of academic ground, self-esteem, and ambition. Oakes also believes that tracking is unfair to students because it denies them their right to a common curriculum. She therefore calls for the *de-tracking* of American schools. De-tracked schools would provide the same curriculum for all, and they would not offer special educational opportunities to any on the basis of ability, achievement, or interests.

Oakes's conclusions, however, are based on her own selective and idiosyncratic review of older summaries of the literature and on her uncontrolled classroom observations. Objective analysis of findings from controlled studies provides little support for her speculations. Whereas Oakes believes that grouping programs are unnecessary, ineffective, and unfair, the opposite appears to be true. American education would be harmed by the wholesale elimination of programs that group learners for instruction by ability.

The harm would be relatively small from the simple elimination of XYZ programs in which high, middle, and low classes cover the same basic curriculum. If schools replaced all their XYZ classes with mixed ones, the achievement level of higher aptitude students would fall slightly, but the achievement level of other students would remain about the same. If schools eliminated grouping programs in which all groups follow curricula adjusted to their ability, the damage would be greater, and it would be felt more broadly. Bright, average, and slow students would suffer academically from elimination of such programs. The damage would be greatest, however, if schools, in the name of de-tracking, eliminated enriched and accelerated classes for their brightest learners. The achievement level of such students falls dramatically when they are required to do routine work at a routine pace. No one can be certain that there would be a way to repair the harm that would be done if schools eliminated all programs of enrichment and acceleration.

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Commentary

Identifying High Ability Preschoolers

A Review of *Identifying Gifted Preschoolers* by
Barbara Louis, Candice Feiring, and Michael Lewis

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As early childhood education is gaining more and more importance in the field of education, identifying young gifted children has become an important issue in the field of gifted education. In the past five years, research has increased on the subject of identification (Burns, Matthews, & Mason, 1990; Burns & Tunnard, 1991; Louis, Lewis, & Feiring, 1991; Parkinson, 1990; Robinson & Weimert, 1990; Rogers & Silverman, 1988; Shaklee & Hansford, 1992). Various identification techniques have been developed or are in the process of being developed.

Identifying Gifted Preschoolers is a timely videotape and teacher's manual produced by Barbara Louis, Candice Feiring, and Michael Lewis.The thirty minute training tape, which has a high technical quality, was produced to help teachers recognize gifted preschool children in a school setting. A well designed teacher's manual accompanies the tape, and it also describes a second assessment task. The videotape identifies three areas where a child can demonstrate advanced abilities: spatial abilities, verbal abilities, and problem solving abilities. It then shows average and gifted 3 and 5 year old children completing tasks requiring the use of these specific abilities. Each example is clearly presented and analyzed. Children are shown doing the tasks but never heard; the narrative is dubbed over the verbal interactions. By allowing viewers to hear part of the verbal interactions with the children, a richer context for viewers could have been established.

The videotape, if used by teachers as an identification tool, needs to be used with some caution. First, the only definition of giftedness in the tape or the manual is "Some children learn more quickly and can accomplish more difficult tasks at an earlier age than most. These children are considered to be gifted." This definition is very simplistic and the connection between the first part of the definition and the second is not as obvious as the authors seem to believe. The developmental rates of the children could be a rational explanation of the differences. Other explanations could be early stimulation, such as previous school experience, home experiences, or self teaching from TV shows such as *Sesame Street*.

Second, even though the authors mention that children "can show their abilities in many different areas," and "may show advanced abilities in all or any one of these areas," no examples are given of other areas which are either not as well known, or harder to identify (e.g., visual, mechanical, or artistic abilities). Within each area the tasks presented to the children are isolated from everyday life and may not resemble the real abilities of the child. For example, problem solving is illustrated by presenting the child with a set of blocks of different sizes, shapes, and colors. The child then has to figure out different ways of arranging these blocks. In another task, mentioned in the manual, the adult asks the child how to arrange a birthday party for a friend. A child may not show many different strategies or know what is needed for a birthday party. Therefore, the child may not be identified as having advanced problem solving skills. The child may display problem solving skills in other domains (e.g., science or play). For example, a child may not demonstrate a superior ability in reproducing a pattern that involves looking at a picture and then translating it into a 3- dimensional object when presented with the blocks. However, the same child may be knowledgeable about an area of interest (e.g., planets, American Indians, or dinosaurs) that goes beyond the knowledge of a 3 or 5 year old. None of these tasks would have assessed that special knowledge and interest.

Finally, the tasks as illustrations of advanced abilities are similar to those used in developmental assessment. They do not seem to have been created to discover especially high abilities. They may assess the child's developmental level, but they do not show how much more the child knows or is able to do.

Identifying Gifted Preschoolers emphasizes important issues in early childhood education, such as:

- Children develop at different rates;
- Teachers need to recognize how children express their advanced abilities;
- Children must be inspired to reach their potential and gain a sense of accomplishment; and
- Learning tasks should challenge, motivate, and encourage interest in learning.

Although this videotape should not be used as the only tool for identifying young children with high abilities, it does raise awareness of the different developmental rates of children. However, it falls short of being a good identification tool for advanced abilities because of its simplification of the issue, the lack of theory or research to back up all the statements, assumptions of differences between average and gifted young children, and the restricted range of tasks.

Teachers interested in identifying high ability young children should supplement their investigation with additional research. Many researchers believe that in order to better identify high ability young children, an identification system should combine more than one approach (Burns, 1990; Fatouros, 1986; Ehrlich, 1980; Felker, 1982; Hollinger, 1985; Karnes, 1986; Roedell, 1980; Smutny, 1989). Useful information can be collected from parents through the use of interviews, checklists, and anecdotal records (Hanson, 1984; Louis & Lewis, 1992; Roedell, Jackson, & Robinson, 1980; Wolfle, 1989) from teachers through observations, work samples, interest assessment (Cohen, 1989; Wolfle, 1989), and other sources, such as test scores, performance ratings, or results from the tasks previously described.

Identifying Gifted Preschoolers presents the viewer with a visual and written training package that is a first step in developing a broad-based screening and identification system tailored to the needs of bright young students. Persons involved in designing and developing programs for preschoolers should review this training package.

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TELEVISION: GOOD or BAD?

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Commentary

Preparing for Tomorrow. . . Today: Future Problem Solving

Materials reviewed by Jann Leppien

The University of Connecticut
Storrs, CT

The developers of the Future Problem Solving Program (FPSP) have created a valuable product which coaches, teachers, and other individuals who are directly involved in training activities related to the Future Problem Solving Program in their schools will want to purchase. *Preparing for Tomorrow. . . Today* is a 45 minute videotape which follows two teams of students through the entire FPS process in detail.

The tape begins with an overview of the program by Dr. James Alvino, the Executive Director of the FPSP. Explanations of each of the 6 steps of the FPS process precede footage of the students working toward their best solutions. Teachers' comments provide tips, insights, and instruction garnered from years of experience as award-winning coaches. The viewer is encouraged to stop the video and practice each of the steps in a similar fashion to what was observed on the tape. This practice serves as a first-hand experience for the participants to become acquainted with the process, learn how to manage and facilitate a problem-solving team, and fine tune their skills to assist students as they progress through the program.

Many readers are aware that the Future Problem Solving Program is an international educational program designed in 1974 by the creativity pioneer Dr. E. P. Torrance and his wife Pansy. Combining the creative problem solving process developed by Osborn and Parnes and some potential problems of the future, Torrance launched what has become one of America's largest educational programs. Today an estimated 200,000 students in all fifty states and numerous foreign countries are using the program's materials.

The FPSP is a year-long program in which teams of four students use a six-step process to solve complex scientific and social problems of the future. During the year, teams work on three problems. At regular intervals throughout the year, the teams mail their work to evaluators, who review the students' response booklets and return them with suggestions for improvement. From the feedback that the team's receive and with additional coaching, the students become increasingly more proficient at problem solving. Of the three problems the students complete, the first two are practice problems, and the third problem is competitive and serves as the qualifying problem used to invite schools to state or regional FPS bowls. Winning teams in each of the three grade level divisions, 4-6, 7-9, and 10-12 at the state FPS Bowls are invited to attend the International Future Problem Solving Conference.

This video is an indispensable training tool for the experienced coach and newcomer alike. The training video can be purchased with additional materials, including a coaches guide to the Future Problem Solving Program; an International FPSP Conference Champions book, showcasing the three 1989 winning teams solutions and evaluations; a program brochure; and a set of handouts and transparencies to accompany the training tape. The transparencies focus on the rules of brainstorming, specific training tips for each step of the FPS process, and a list of categories teachers can use with students to increase their flexibility in generating a variety of possible problems. The video is VHS formatted and can be purchased with or without the supplemental materials. Several price ranges exist, however, the most attractive is the materials package which includes this comprehensive 45 minute training video and a 15 minute videotape summarizing the FPS program and process for $99.95. Both tapes are available without the supplemental materials for $69.95.

The Future Problem Solving Program challenges students in applying information they have learned to some of the most complex issues facing society. They are asked to think, to make decisions, and, in some instances, to carry out their solutions. Now educators can purchase a set of comprehensive materials that can provide the technical assistance to those who shoulder the responsibility for helping their students become the solvers of tomorrow's problems. . . today.

To receive information about this program, and other FPSP support materials contact: Future Problem Solving Program, 315 West Huron, Suite 140-B, Ann Arbor, Michigan, 48103-4203, (313) 998-7663.

Research in Progress

Metamemory as a Characteristic in Describing Economically Disadvantaged Gifted Children

Mary M. Frasier
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In its attempt to develop as complete a picture as possible of gifted students from economically disadvantaged backgrounds, The University of Georgia has encouraged related research studies. One such study, designed to discover what economically disadvantaged gifted children know about memory and memory processes, is being conducted by Karne Lambie, through The Department of Educational Psychology at the University of Georgia. Knowledge about memory is termed "metamemory." Metamemory processes are important because they reflect the executive functions of the memory system that are used to regulate and control many aspects of intelligent behavior.

Two groups of students will be involved in this study. One group will consist of 40 economically disadvantaged children in grades 1, 2, 4, and 5 who have been identified for gifted program services using the Research-Based Assessment Plan being tested at The University of Georgia. The other group will consist of 40 students in grades 1, 2, 4, and 5 who have been identified for gifted program services according to the standard criteria used in Georgia. This criteria requires at least a 130 IQ determined by aptitude and/or achievement test performance. A metamemory interview instrument developed in 1975 by Kreutzer, Leonard, and Flavell will be used to collect data from the sample population. Contact The University of Georgia for further information.

Underachievement Among High Ability Puerto Rican High School Students: Perceptions of Their Life Experiences

Eva I. Díaz
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State College, PA

Puerto Rican students are often described as underachievers. Although several studies have been conducted in the area of underachievement, there has not been any research focusing on high ability and/or gifted Puerto Rican students who are underachieving in school. This study will examine the self-environment. It will investigate the views that Puerto Rican high ability underachievers hold of their life experiences as related to family/culture, school/classroom, community/society, and personality and how these experiences contribute to their actual academic status. A naturalistic, qualitative, and phenomenological approach, including participant observation fieldwork, ethnographic interviewing, document review, and case studies will be the main strategies used to gather data. Finally, patterns of interactions among factors underlying the students' underachievement will be assessed.

National Achievement Assessment of High Ability Students

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Very little current research is available on the number of students in schools who are not achieving to their potential. Estimates have varied from a very high percentage to a very low percentage. The researchers are conducting a national survey of 12,000 fourth, fifth, and sixth grade students who have been identified as gifted and talented to assess student and teacher perceptions of academic performance. The responses will be analyzed for achievement patterns by grade, subject area, and gender. Seventy-two Collaborative School Districts from the NRC/GT are involved in the study.

Recent Research

A Study of the Status of Local Programs for Students With High Abilities in Twenty States and the Factors That Lead to Their Retention and Elimination

Jeanne Harris Purcell, Ph.D.
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The National Research Center on the Gifted and Talented sponsored a study to examine the status of local programs for students with high abilities and the reasons to which educators and key personnel attributed the status of these programs. The study was completed in a purposive sample of 20 states, divided into four groups according to economic health (i.e., good, poor) and the existence or nonexistence of a state mandate to provide program services. This descriptive ex post facto research was completed in two phases. Phase I, a mail survey to more than 3,200 local personnel that yielded a response rate of over 54%, was designed to assess the status of programs for students with high abilities and the reasons attributed by local personnel to the status of their programs. Phase II, interviews with key personnel (the state director of gifted education, the president of the state advocacy organization, a school superintendent, a chairperson of a local board of education), was designed to triangulate the findings from Phase I.

Results from Phase I indicated that programs in states with mandates and in good economic health are "intact" and "expanded," while programs in all other groups are being "threatened," "reduced," and "eliminated" in high numbers. The majority of respondents (68%) from states with mandates to provide services to students with high abilities and who reported programs as intact or expanded attributed the status to the existence of a state mandate and advocacy efforts. Almost half of the respondents from states without mandates and reporting their status as reduced, threatened, or eliminated attributed this status to a decline in state and local funds. The majority of these respondents did not believe programs for high ability students were being threatened, reduced, or eliminated because of policy decisions related to reform issues or on the grounds of racial bias. Additionally, respondents indicated that approximately 75% of students with high abilities in grades three to eight receive program services, that 50% of students in grades one to two and nine to twelve receive similar services, and that program services for students Pre-K to K were almost nonexistent. Results from key personnel in Phase II of the research triangulated the findings from Phase I. Advocacy efforts were most frequently associated by key personnel with programs that were intact or expanding, and reductions in funding were associated with programs experiencing jeopardy.

• • •

The Effects of Methodological Science Process Skills Training in Environmental Science on Intermediate Student Creative Productivity

Scott Edward Johnson
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Numerous professionals in science and gifted education suggest that elementary teachers should offer interest-based experiences, teach methodological skills, and provide students with the opportunity to engage in research, as promising methods to nurture scientific talent. This study compared the effect of three instructional methods in environmental science (Type I exploratory activities, Type II methodological training, and combined Type I/Type II activities) and the influence of grade level, gender, achievement scores, attitude toward science, and self-efficacy for creative productivity on the initiation of scientific investigations. In addition, these variables and assignment to treatment group were investigated for their effect on post-treatment attitudes toward science and post-treatment self-efficacy for creative productivity.

A quasi-experimental, nonequivalent control group pretest-posttest design was used to examine the effects of the variables during the ten weeks of the study, and grade level and pre-treatment self-efficacy for creative productivity scores were covaried for all analyses. The subjects were 342 above-average 4th, 5th, and 6th grade students in 11 states.

The discriminant function equation used to investigate the effects of variables upon investigation initiation was significant (chi square= 31.53, 5 df, $p < .00001$), with five variables accounting for 9 percent of the variance. Participation in the Type I group was the most powerful predictor of student decisions to initiate investigations.

The stepwise multiple regression used to investigate self-efficacy accounted for 7 percent of the variance, beyond the 37 percent accounted for by the covariates. Participation in the Type II group was the most powerful predictor of posttest self-efficacy.

The stepwise multiple regression used to investigate science attitude accounted for 21 percent of the variance, beyond the 10 percent accounted for by the covariates of grade, pre-treatment self-efficacy, and pre-treatment attitude. Participation in the Type I group and the Type I/Type II group were the most powerful predictors of posttest attitude toward science.

• • •

Study to Address Family Factors That Support or Hinder Achievement

Lisa King
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One objective of the project being conducted at The University of Georgia site of The National Research Center on the Gifted and Talented is to investigate factors that impact the identification of gifted students from economically disadvantaged families and areas. One of those factors is the role played by families. A *Family Matters Survey* had been developed to examine factors within the familial contextual process that enables gifted disadvantaged children to achieve. Factors to be investigated include: parental beliefs and attitudes regarding education, parental expectations and aspirations for the child, supportive interactions that occur between the parent and the child, and support structures operating within the family setting. Families of students identified through The University of Georgia's Research-Based Assessment Plan will be interviewed on the *Families Matters Survey*. Contact The University of Georgia for further information.

A Study of Effective Classroom Practices With Gifted Students in Rural Settings

Thomas Stephan Hays
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Recent studies conducted by The National Research Center on the Gifted and Talented (NRC/GT), found that little curriculum modification is being provided for gifted students in the regular classroom and that between 40-50% of the content can be eliminated for these students. Other research findings indicate that gifted and talented children spend most of their school day in a regular classroom with teachers who have insufficient training and experience to meet their needs. Experts in the field of gifted education have described and advocated instructional and curricular modifications for gifted students in the regular classroom. The methods for differentiating instructional and curricular practices for gifted students in the regular classroom include but are not limited to ability grouping; self-selected independent study; acceleration; higher order, cognitive processing; and questioning strategies.

This research was an ethnographic study of three rural schools identified by experts as effective in meeting the needs of gifted students in the regular classroom by classroom teacher use of curriculum modification and differentiation techniques. Naturalistic observation, in-depth interviewing, and document review were the major information gathering techniques used in this study. Field notes, recorded during observations, interviews and after analyzing documents, were coded and analyzed for patterns themes, and topics using inductive and logical analysis.

Curriculum modification techniques and instructional strategies used by classroom teachers in the three sites were reported. The effect of a gifted education specialist on classroom instruction, curriculum materials, and training strategies was analyzed. The instructional strategies and curricular modifications used most often by classroom teachers were: curriculum compacting, various enrichment activities, and higher order thinking skills. Factors that emerged from the study regarding effective classroom practices with gifted students in rural settings included: collaboration, administrative support, school philosophy, teacher training, good coordination of the program, and community support.

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Newsletter
Fall 1993

Responding to the Written Word:

Issues in Educating Gifted & Talented Students

E. Jean Gubbins
The University of Connecticut
Storrs, CT

All of the researchers associated with The National Research Center on the Gifted and Talented have been paying particular attention to their ability as wordsmiths as they cast the complex findings of applied research studies in different formats for multiple audiences. We write research monographs, journal and newsletter articles, briefing sheets, executive summaries, and practitioners' guides about the issues in educating gifted and talented students. The amount of paper that passes through laser printers and photocopiers is absolutely phenomenal. We are on a first name basis with the people who repair the machines; oftentimes they just stop by to see how things are going because they know the machines are operating around the clock.

The only people who approach our office tentatively are from the central warehouse and the university mail room. Their level of tentativeness is based on the number of crates of paper to be delivered to keep the photocopiers running or on the number of pallets of mail to be hauled to the mailroom for postage. A steady stream of people schleps the latest NRC/GT documents emblazoned with the university seals from one place to another. NRC/GT members join the parade which begins to look like an old-fashioned fire brigade as containers pass from one person to the next. Getting the word out about NRC/GT's applied research has been a high priority since the early days of the Center. We didn't want the research results logged into journals or magazines and then placed on bookshelves without grabbing the attention of readers. We wanted educators to read the documents and to apply the findings in their classrooms. Joseph S. Renzulli, Director of NRC/GT, designed a dissemination plan that rivaled those of marketing experts. The plan is essentially a "chain letter approach." We send documents to all the people in our network; they in turn disseminate them to others.

It is great that all of the documents are getting out to you and that they are once again hitting the glass surface of a photocopier to be shared with others. Tracking the number of people who receive our documents or who reprint them in their local publications is one way of determining the impact of the Center. Millions of people from all states, several territories, and a host of foreign countries have access to our documents! Now we are gathering data on what you think of the "written word." We have been randomly placing Reader Evaluation forms with our mailings, and we thought that we would take the liberty of sharing some reactions with you. We asked people what they learned, how they used the information, and whether the information had any impact on their students. Here is a sampler of their responses:

Please list two new things you have learned from reading the document.

Benefits of "Creativity" for disadvantaged youth. Materials for developing creativity.
– **Richard E. Chandler, Arlington, TX**

(Continued on page 2)

(Continued from page 1)

That it's possible to summarize a big and important topic in concise and elegant format.

– Rena Subotnik, New York, NY

When teachers eliminate as much as 50% of curriculum for gifted children there is no difference in achievement test results.

– Ed Hinckley, Avon, CT

I will pretest my gifted students and allow them to opt-out (full or part time) of team work in math and/or reading and check their achievement the first 9 weeks of school. This will allow ability grouping and compacting.

– Joan D. Bodkin, Henderson, KY

My wavering faith was confirmed that some people in academia have their feet in the real world. I am so glad that a "Research Center" is able to see the real problems and address them in plain (thank you) English.

– Gina Ginsberg Riggs, Glen Rock, NJ

Briefly describe how you have used the new information in your present role/position.

Provided information to school administrators and school committee. As PTO president and parent representative, will share with other parents and place information at the parent information center at the public library.

– Kathy Borges, Somerset, MA

Will share with principal, city-wide G/T program. With administrator's permission, will duplicate (Ability Grouping) and share with teachers and parents.

– Josephine C. Baker, Washington, DC

Everything that you send has been shared with our statewide task force on gifted education that meets monthly and consists of parents, teachers, administrators, and community members. Some students attend at times. People select information of interest and use it in their local districts.

– Roberta Knox, Santa Fe, NM

I will be able to use this information when counseling parents of gifted children in possible approaches to their children's education, as well as in presentations to school personnel regarding approaches to serving gifted children in the classroom.

– Barbara Louis
New Brunswick, NJ

I have used the reports/ papers as readings for students, as resources for advocates, and as references for my work. Nice job on topic selection and authors. I have also posted information on Special/Net.

– Mary Ruth Coleman
Chapel Hill, NC

The next level of dissemination is to assess whether the information has had any impact on students. We asked the following question, and we are beginning to see some preliminary results:

Has this new information had any impact on your students?

The information distributed by NRC, the research projects that local school districts have participated in, and the impact of Sally Reis's presentations at state conferences have changed programs.

– Conrad Castle, Jackson, MS

I have drawn many ideas from the monographs for use in my G/T and creativity books.

– Gary A. Davis, Madison, WI

It will this September! Past articles have changed the way I think and present lessons! Thanks so much!

– Sally Clemens, Bend, OR

It's nice to have your views/opinions of 15 years validated by research data. Helps me continue my G/T advocacy.

– Charlotte A. Candelaria, Sitka, AK

Has had impact on provision of information to coordinators in the field of gifted education. Next step for NRC/GT is to disseminate to other fields.

– Nancy B. Hamant, Worthington, OH

Keep it coming—it may...in the future be helpful.

– Juli Schenfeld, Johnstown, PA

This year's class promises one of the greatest achievement spreads in my experience. Yes, I believe you've given me ideas to explore.

– Joan D. Bodkin, Henderson, KY

Paper is only one form of communication. We also use satellite presentations, electronic mail, television, and radio. On any morning you might hear Joe Renzulli or Robert Abelman on National Public Radio or see a teleconference on cable television. Just keep tuning in. We will continue sending messages about research-based issues in gifted and talented education, and we hope to hear more from you about the impact of our research on your students or other constituents.

New Districts Involved with the NRC/GT

Lone Rock School District #13
Stevensville, MT

Lincoln Public Schools
Lincoln, NE

LaSalle Academy
Providence, RI

New Consultant Bank Members

George Betts
University of Northern Colorado
Greeley, CO

Maurice D. Fisher
Gifted Education Press
Manassas, VA

Françoys Gagné
University of Quebec at Montreal
Montreal, Quebec
Canada

Merle B. Karnes
University of Illinois
Champaign, IL

Robert J. Kirschenbaum
Evergreen Assessment Center
Fort Lewis, WA

Maurice Miller
Indiana State University
Terre Haute, IN

Jane M. Piirto
Ashland University
Ashland, OH

Assumptions Underlying the Identification of Gifted and Talented Students

E. Jean Gubbins
Del Siegle
Joseph S. Renzulli
Scott W. Brown
The University of Connecticut
Storrs, CT

For decades the "metric of giftedness" has been test scores, more specifically IQ scores. The tradition of relying on IQ scores to define one's ability curried favor with psychologists and educators at the turn of the century as the technology of measurement took hold. Numbers became the determinants of what we thought students could accomplish in school. We took comfort with a "solid objective" approach to assessing abilities. The level of comfort, however, was often challenged when there were dramatic differences between the academic accomplishments of our students and what the numbers predicted. We soon realized that the prophecy of the numbers was really just for future numbers on the same or similar tests. Given this insight, along with new theories of intelligence by Gardner (1983) and Sternberg (1985), we wanted to ask practitioners and policy makers about their assumptions underlying the identification process.

We recalled that several years ago Dr. Marshall Sanborn of the University of Wisconsin recommended the following guidelines for a comprehensive identification system in an unpublished paper cited in Renzulli, Reis, and Smith, 1981:

- Apply multiple techniques over a long period of time.
- Understand the individual, the cultural-experiential context, and the fields of activity in which he/she performs.
- Employ self-chosen and required performances.
- Allow considerable freedom of expression.
- Reassess the adequacy of the identification program on a continuous basis.
- Use the identification data as the primary basis for programming experiences.

Development of the Assumptions Survey

Sanborn's guidelines were studied, along with a review of the literature, to create an item pool that would become the basis for a national survey on the Assumptions Underlying the Identification of Gifted and Talented Students. Items were generated, field tested, revised, and field tested again with content area experts, graduate students majoring in gifted and talented education, and participants in the 1991 National Association for Gifted Children (NAGC) Conference. Twenty revised items were retained and the survey was disseminated to 6,300 potential respondents. The main source of respondents was the Collaborative School Districts associated with The National Research Center on the Gifted and Talented. Other sources included our Consultant Bank members and participants in a session at the 1992 NAGC Convention. Completed surveys were returned by 3,144 people from 47 states, one territory, and Canada, resulting in a 50% return rate. All types of communities were represented, including those with diverse demographic, ethnic, and socioeconomic characteristics. Teachers at all grade levels and administrators with various building and district level responsibilities were included in the sample.

Respondents were asked to indicate the degree to which they agreed or disagreed with items reflected in Sanborn's guidelines. A five point Likert scale was used ranging from strongly disagree to strongly agree. Sample items included statements such as the following:

- Identification should be based primarily on an intelligence or achievement test.
- Teacher judgment and other subjective criteria should not be used in identification.
- Identification should take into consideration the cultural and experiential background of the student.
- Giftedness in some students may develop at certain ages and in specific areas of interest.
- Regular, periodic reviews should be carried out on both identified and non-identified students.

Given the large number of respondents and the number of items, the best way to interpret the results was to distill the data using a factor analytic approach, principal component analysis. This type of analysis would search the data set for correlations and determine the number of underlying factors in the instrument. Six factors were generated originally. Two factors had two items each; these factors were connected conceptually and were collapsed into a single factor, resulting in a five factor instrument. The twenty-item instrument could then be interpreted

(Continued on page 4)

(Continued from page 3)

using the factor names and descriptors in Figure 1: Restricted Identification Practices, Individual Expression, On-going Assessment, Multiple Criteria, and Context-Bound Identification Techniques.

Factor		*Item*	*Descriptor*
1	Restricted	4.	Achievement/IQ test
		8.	Precise cut-off score
		11.	No teacher judgment/subjective criteria
		14.	Restricted percentage
		15.	Services for identified students only
2	Individual Expression	6.	Case study data
		7.	Assess student-selected tasks
		10.	Multiple formats for expressing talent
		19.	Non-intellectual factors
3	On-going	9.	Identification information leads to programming
		13.	Judgment by best qualified persons
		17.	Alternative identification criteria
		18.	Regular, periodic reviews
4	Multiple Criteria	1.	Multiple expression of abilities
		2.	Developmental perspective and interest
		3.	Multiple types of information
5	Context-bound	5.	Cultural/experiential background
		16.	Knowledge of students' cultural/ environmental background
		12.	Locally developed methods and criteria
		20.	Reflect types of services and activities

Figure 1
Factor Names and Descriptors

Data Analyses and Interpretation

A review of the data analysis by educators, consisting of regular classroom teachers, teachers of the gifted and talented, administrators, and consultants, revealed significant differences in the extent of agreement or disagreement among these groups. For example, multivariate analysis of variance (MANOVA) procedures with the five factors of the instrument as the dependent variables and the four levels of educator as the independent variables revealed several significant differences. Following the multivariate analyses, univariate analyses of variance (ANOVAs) were computed for each dependent measure (Factors 1-5) separately. Scheffé's tests were used as the multiple comparison procedure to follow-up significant ANOVAs. The statistical data on each factor will be presented in another journal article that is in preparation. The major trends in the data will be highlighted.

It is interesting to note that the means for all educators indicated disagreement with Restricted Identification Practices (Factor 1) relying on intelligence or achievement tests, precise cut-off scores, exclusion of teacher judgment or subjective criteria, fixed percentage of students, and services for identified students only. There were statistically significant differences in the level of disagreement between regular classroom teachers and teachers of the gifted, with the teachers of the gifted having greater disagreement. Regular classroom teachers and administrators also had statistically significant differences on Factor 1, with administrators having greater disagreement (see Figure 2).

Significant differences among the educators' level of agreement were not found for Factor 2 - Individual Expression, emphasizing the use of case study data, student-selected tasks, multiple formats for expressing talents, and non-intellectual factors (e.g., creativity and leadership). Educators agreed that identification techniques should be responsive and sensitive to the individual's ability to express talents and gifts through various measures or observation tools.

On all remaining factors, however, there were significant differences among the educators' responses. Regular classroom teachers agreed, but not as strongly as teachers of the gifted, administrators, and consultants, that On-going Assessment (Factor 3) was important. Educators believed that regular, periodic reviews involving judgments of persons best qualified to assess the student's performance were important considerations in designing and implementing a flexible identification system. They were also in agreement about using alternative identification criteria for specific performance areas. All of these data from alternative criteria, periodic reviews, or expert judgments provide direction and guidance for future programming experiences and opportunities.

A similar response pattern emerged for Multiple Criteria (Factor 4) with regular classroom teachers having significantly different responses from teachers of the gifted, administrators, and consultants. Regular classroom teachers agreed, but not as strongly, with statements emphasizing that gifted and talented students may express their abilities in many ways or that giftedness in some students may develop at certain ages and in specific areas of interest. Their level of agreement was also not as strong concerning the use of several types of information about a student as a basis for an effective identification plan.

The differences for Factor 5 (Context-bound Identification) were among teachers of the gifted and the other three groups: regular classroom teachers, administrators, and consultants. Teachers of the gifted had a stronger level of agreement than other groups of educators about their beliefs in the importance of the students' cultural, experiential, and environmental backgrounds, the need to

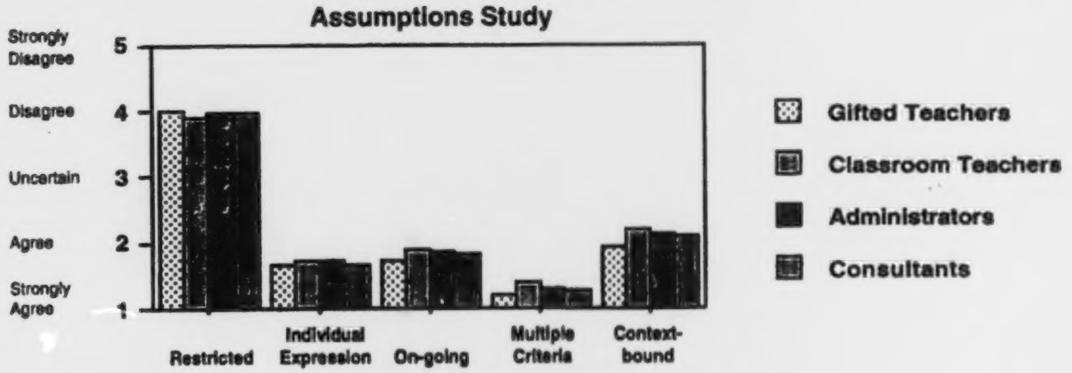

Figure 2
Mean Response by School Role

consider locally developed methods and criteria for specific populations, and the efficacy of matching the identification process with the services and activities available in the district. It appears that across all factors, the teachers of the gifted who work most closely with programming issues and practices have stronger opinions about the most appropriate identification practices.

Congruence of Research Findings and Practices
The survey results present an interesting picture of the assumptions underlying identification practices. Educators disagreed with a restricted approach, agreed with individual expression, on-going assessment, and context-bound procedures. Furthermore, they strongly agreed with the importance of using multiple criteria. This does not sound too unusual; these assumptions are part of the litany of the response to the question: How do you identify gifted and talented students? What is unusual and somewhat perplexing is the discrepancy between these assumptions or beliefs expressed by educators and subsequent practices documented by other researchers in recent times.

In the NRC/GT study on Classroom Practices of over 3,000 third or fourth grade teachers, Archambault, Westberg, Brown, Hallmark, Emmons, and Zhang (1993) found that most of the public schools surveyed used achievement tests (79%), followed by IQ tests (72%), and teacher nomination (70%) as their main sources of data collection. The data sources were similar, but the order was different in the findings by Cox, Daniel, and Boston (1985): teacher nomination (91%), achievement tests (90%), and IQ tests (82%). Alvino, McDonnel, and Richert (1981) confirmed these procedures in an earlier study when they found that most identification procedures included intelligence tests, nominations, and achievement tests. These procedures of using tests or teacher recommendations are limited, and they do not reflect the findings of the study on the Assumptions Underlying the Identification of Gifted and Talented Students.

Understanding that our assumptions or beliefs and practices may not be in full agreement is a first step in reviewing the appropriateness of existing or future identification policies and the specific identification practices that should be guided by state and local policy. We need to promote discussions centering around two simple, but recurring questions: Who are the gifted and talented? How do we find them? Responses to these questions will hopefully influence future beliefs and research-based practices that are more congruent than those revealed in the present study. The challenge then is to bring beliefs and practices together and to include other techniques, such as biographical and autobiographical data; product or portfolio review; performance assessment; developmental identification; and self, peer, or parent nomination in the development of a flexible and defensible identification system that is responsive to the educational needs of our students.

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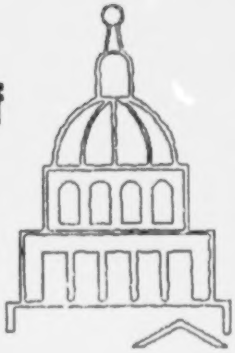
A Study of the Status of Programs for High Ability Students



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Disagreement currently exists among experts, researchers, and journalists regarding the extent of concern and commitment related to the education of students with high abilities. Some believe the field is at the threshold of renewed interest; others believe that the field is facing a crisis in which programs for students with high abilities are being eliminated in states across the nation. Not only do experts, journalists, and educators disagree about the status of programs for these students, but they also disagree with respect to the nature of the reason(s) to attribute to current program status. Reasons mentioned include: economic factors, the effects of the reform movement, the existence or nonexistence of state mandates, and misconceptions regarding the needs of high ability students. Accordingly, the purpose of The Program Status Study, conducted in two phases from May, 1992 to January, 1993, was twofold: to determine from local personnel (i.e., district personnel responsible for coordinating and/or providing services to high ability students) the status of programs for these students and the reasons they attribute to the status of their district's program, and to triangulate these findings from local personnel with research findings from key personnel (i.e., state directors of education for high ability students, heads of state parent advocacy groups for high ability children, school superintendents, chairpersons of boards of education).

Twenty states, geographically representative and divided into four groups, participated in the research and included states in good economic health with a mandate to provide services to high ability students (Group 1), states in good economic health without a mandate (Group 2), states in poor economic health with a mandate (Group 3), and states in poor economic health without a mandate (Group 4). The following findings from The Program Status Study are of particular interest to teachers, parents of exceptional students, as well as those who are responsible for policy decisions related to these students.

FINDING 1

Programs for high ability students in states from Group 1 (good economic health with a mandate) were, for the most part, stable and expanding; only 2 programs in 10 were reduced or threatened with reduction or elimination in the 1991-1992 academic year. Programs in all other groups of states were jeopardized in higher numbers. One in four programs in states from Group 2 and Group 3 (good economic health without a mandate and poor economic health with a mandate, respectively) were threatened, reduced and/or eliminated. One in three programs in states from Group 4 (poor economic health without a mandate) experienced jeopardy.

The data indicate that program services for high ability students at the local level are not at the threshold of renewed interest. Instead they are experiencing setbacks of significant proportions in states in Group 2, Group 3, and Group 4. This finding was triangulated by three-quarters of key personnel (i.e., state directors of gifted education, heads of state parent advocacy groups, school superintendents, chairpersons of boards of education) who reported that the future of programs for high ability students was uncertain, that program delivery components would change (e.g., no more pull-out), or that programs would be reduced. Therefore, parents, teachers, and policy makers in all twenty states need to increase vigilance of programs for high ability students and increase advocacy on behalf of the students they serve. Advocacy is necessary at a number of levels, including at the classroom level between the teacher and parents of exceptional children; at the building level between parents and building administrators; at the district level among parents, teachers, central office staff, and board of education members; and at the state level among parents, teachers, and elected officials.

> *"The current research simply does not substantiate prior claims that programs are being eliminated coast to coast due to the reform movement, specifically the grouping issue...."*

FINDING 2

The reason most frequently associated with program stability and expansion in states *with* a mandate (Group 1 and Group 3) was the existence of the mandate; many local personnel indicated that without the mandate more programs would have been jeopardized. The reason most frequently associated with program stability in states *without* mandates was advocacy. Local personnel, as well as participants in Phase II of the research, indicated that the most powerful advocates for programs were parents of high ability students, characterized by participants as "articulate," "persuasive," and "powerful, especially during elections." Ironically, many participants in the study did not believe parents were aware of their power to influence policy, nor did they believe parents used their power to maximize educational services for their children.

Thus, factors most associated with program stability were mandates and advocacy efforts. The data suggest that advocacy efforts need to be directed toward different groups of policy makers, depending upon the existence or nonexistence of a state mandate. Advocates for high ability children who want state mandates maintained need to direct a large proportion of their efforts toward policy makers in the legislative and executive branches of their state government. Advocates in states without mandates need to direct their efforts toward policy makers at the four levels mentioned earlier: the classroom level with teachers, the building level with administrators, the local or district level with board of education members, and the state level with policy makers in the legislative and executive branches of government. Regardless of the group targeted for lobbying efforts, the following strategies, carefully planned and orchestrated by interested parents, teachers and/or students, have proven effective: personal letters, group-sponsored letters, personalized information packets, newsletters, newspaper editorials, letters to the editor, news articles, petitions, personal phone conversations, personal visits or meetings, small group meetings, radio or TV talk shows, and press breakfasts and/or luncheons.

Recent Research

FINDING 3

The factor most frequently associated with program jeopardy across all groups of states and participants in both phases of the research was related to reduced local and state funds. The current research simply does not substantiate prior claims that programs are being eliminated coast to coast due to the reform movement, specifically the grouping issue, or due to racial bias. It is reasonable to conclude from the data that the strength of advocacy efforts will determine, in large part, the services for high ability students that are reinstated during better economic times.

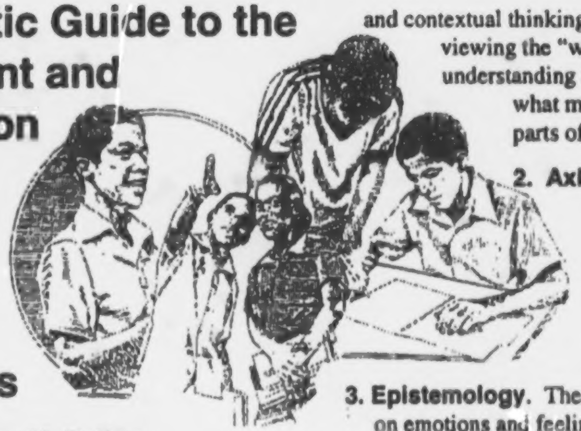
FINDING 4

Services for high ability students are not comprehensive, Pre-K to 12. Students most likely to receive services are enrolled in the upper elementary and early middle school years; approximately 80% of students in grades 3-6 receive program services in Group 1, Group 2, and Group 3. Much smaller numbers of students receive services at either end of their public school experience in these groups of states. Only 40% of students in grades 1-2 receive services in these groups of states, and services for Pre-K students are almost nonexistent. Only half of the secondary students from these groups of states receive program services.

The picture of program services for students in states from Group 4 is more dismal. Sixty percent of students in grades 4-6 receive services, approximately 35% receive comparable services in grades K-3, and no services are available to students Pre-K. Finally, less than half the students in grades 7-8 are provided services, and only 30% of secondary students receive similar services.

To conclude, the current data present a bleak picture with respect to the comprehensiveness of services to high ability students in this sample of twenty states. This bleak picture exists despite research which indicates that high ability students can be identified at an early age and in spite of researchers who argue for more challenging educational opportunities and counseling services beyond those provided in the traditional high school. Clearly, teachers, parents, and policy makers from these states must advocate for educational services to serve children in important, formative years, as well as in secondary years where sufficient challenge is currently not being offered to them.

A Schematic Guide to the Assessment and Identification of African American Learners With Gifts and Talents



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Introduction

Previous research (Richert, 1987, VanTassel-Baska, Patton, & Prillaman, 1989) has found that individuals who are African American or who are from low socioeconomic status are at risk for inclusion in programs for the gifted and talented. Although African American learners compose approximately 16.2% of all students enrolled in American public schools, they make up only 8.4% of those enrolled in gifted programs (Alamprese & Erlanger, 1988). Among the reasons offered for this low representation have been the lack of a systematic, well-defined logic of inquiry for assessing and identifying gifts and talents among African American learners; overreliance on traditional assessment identification procedures; and the use of unidimensional IQ tests and other norm referenced tests. With this in mind, the purpose of this article is to offer a schematic guide to theory and development of assessment methodology and tests that should enhance our capacities to identify gifts and talents among African American learners that emphasize African American worldviews, ethos, and culture.

Developing a Theory of Assessment

Patton (1992) identifies three aspects of a "pure" African American philosophical system that could guide theory and development related to the identification and development of constructs of intelligence and giftedness, as well as subsequent selection of psychoeducational assessment methodologies and practices. They are:

1. **Metaphysics.** The individual uses a holistic view of reality and tends to engage in synthetical and contextual thinking. Emphasis is placed on viewing the "whole" field and then understanding the interconnectedness of what might seem to be disparate parts of the field.
2. **Axiology**. Person-to-person interaction is important. The individual is committed to developing strong social bonds that often transcend individual privileges.
3. **Epistemology.** The individual places emphasis on emotions and feelings and is sensitive to emotional cues.

These orientations are considered "pure" because they reflect historical, classical, African oriented world views and ethos that form the foundation for the cultural themes of African Americans. Of course, not all African Americans embrace this "pure" philosophical system. Nevertheless, many African American learners relate strongly to this philosophical framework and reconstruct life experiences according to these world views. These philosophical world views, values, and behaviors auger for the development of assessment and identification systems that are grounded in pluralistic definitions and theories of giftedness and that include cognitive skills in addition to analytical abilities. Other manifestations of giftedness such as creativity, personality dispositions, and motivation states (Harris & Ford, 1991) must be included in definitions and theories of giftedness and subsequent assessment and identification systems, if they are to be responsive to the needs of African Americans.

Imperatives for Appropriate Assessment

Within the past 15 years, researchers have made advances toward the appropriate multidimensional assessment and identification of gifted African American learners. The following represents a synopsis of suggestions based on theory, research, and experiences that are considered effective in assessing and identifying gifted African American learners.

Screening

Hilliard (1976) and Torrance (1977) developed a checklist of rating scales for assessing the distinct social and psychological indicators of giftedness and creativity within a context of African American culture. Hilliard's checklists, the "Who" and "O," are based on the uniqueness and commonalities of African American cultures and place value on behavior that characterizes divergent experimentation, improvisation, inferential reasoning, and harmonious interaction with the environment (Hilliard, 1976). On the other hand, Torrance (1977) identified a set of behaviors of African Americans that provides the basis for the development of his Checklist of Creative Positives. He identified 18 characteristics that he called "creative positives" to be used to help identify culturally different students as gifted. The inclusion of these checklists in the initial screening of potentially gifted and talented learners has been purported to increase the number of African Americans thereby identified (Frasier, 1989).

Identification

Historically, the use of traditional, norm-referenced, intelligence tests has not resulted in the proportionate identification of African American learners with gifts and talents. However, some intelligence tests, such as the Ravens Coloured, Standard, and Advanced Progressive Matrices, and the Matrix Analogies Test-Expanded and Short Form have been purported to be less culturally and class biased and thus show promise for increasing the number of African American students in gifted and talented programs.

Matrix and Profile Approaches

Several matrix and profile assessment models such as the Baldwin Identification Matrix and the Frasier Talent Assessment Profile take a more comprehensive approach to identifying gifted African American learners. These matrix and profile approaches require the collection of objective and subjective data from multiple sources (e.g., aptitude, achievement, performance, creativity, and psychosocial attributes). The information is then used to develop a profile to be used in the identification process.

Intervention Planning

Several curriculum-based assessment models such as The Program of Assessment, Diagnosis, and Instruction (Johnson, Starnes, Gregory, & Blaylock, 1985) and the Potentially Gifted Minority Student Project (Alamprese & Erlanger, 1988) have been documented as being useful in increasing the inclusion of African American learners in gifted and talented programs. These ongoing-activity programs use an identification-through-teaching (test, teach, retest) approach and employ several additional strategies that have resulted in increased numbers of African Americans being identified as gifted and talented.

More qualitative alternatives to paper and pencil tests have emerged recently. Some promising research emphasizes the use of portfolio and performance based assessments, biographical inventories, and motivational and attitudinal measures. These assessment approaches are thought to complement rather than supplant formal assessment tools.

Additional Research

Research and development is needed to advance test development and gifted education in several ways: 1) developing new and expanded visions about the constructs of intelligence and giftedness, 2) using pluralistic procedures for identifying gifted African Americans, 3) using curriculum based assessment models, which purport to improve the correspondence between testing and teaching the school's curriculum, 4) increasing research on qualitative assessment approaches, 5) focusing on the unique traits and psychosocial characteristics of achieving African Americans, and 6) increasing research on uncovering intragroup differences in cognition, behavior, and motivation of African Americans.

Conclusion

We suggest that the assessment and identification of gifted and talented African American learners be driven by an assessment paradigm complementary to the African American world view and culture. Additionally, it is important to consider the relationships and links among African American world views, assessment theory and methodology, and desirable assessment and identification instruments and practices.

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Creativity Around the World

A Review of *Creativity Training: A Guidebook for Psychologists, Educators, and Teachers*

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Of the many benefits resulting from the end of the Cold War, the increase in intellectual interaction between East and West is perhaps the most significant. Recently, having met psychologists from Eastern Europe and Russia, I became aware of the extensive work being done on creativity, especially in the areas of theory and education. It was with this heightened anticipation that I read *Creativity Training* by Edward Necka, a member of the Team of Psychology of Creativity at Jagiellonian University in Cracow, Poland, and a recent post-doctoral fellow at Yale University. Necka has been involved with the study of intelligence and has done some promising work on the creativity-intelligence relationship (Necka, 1992).

The purpose of the book is to "aid...psychologists, educators, teachers, social relations specialists, and other persons interested in stimulating people's creativity" (p. 8), with an emphasis on group training techniques. The following questions can be used as guides when reading this book:

- How do "creative problem-solving" and "creativity training" differ?
- What role does interpersonal interaction play in the creative process?
- What are the creative advantages and disadvantages of working in a group?
- Which mental "abilities" influence creative thinking?
- With respect to creativity training, how flexible should the program be?

The introduction contains a description of the program's underlying philosophy. A distinction is drawn between creative problem-solving, "techniques which aim at solving a concrete task by means of appropriate manipulations, methods, 'tricks,' etc.," and creativity training, "techniques aiming at developing the creative capabilities of individuals and teams" (p. 7). The techniques (or "tools") involved in creative problem-solving include brainstorming and synectics, and a group using these techniques is also seen as being a "tool" for problem-solving. In contrast, creativity training is used to increase creative potential, with the individual and group becoming the focus of the activities, rather than being a "tool." I must admit that this distinction still puzzles me, and I would have liked to have seen a more detailed explanation.

The next section includes two chapters: *Interpersonal Skills*, based upon the belief that creativity is a group process and seldom occurs outside of a "social context" (p. 9); and *Motivations*, "the most difficult to train" (p. 10), but still a necessary component of creativity. Chapter Three deals with each of the creative "abilities": thinking in the abstract, making associations, deductive reasoning, inductive reasoning (analogies), metaphorizing, and transformations. The next chapter deals with obstacles to creativity (both internal and external) and strategies for overcoming them. The organizational schema for the creativity training program is described in reasonable detail in the final chapter, but I would have appreciated this information more thoroughly if it had been provided earlier in the text. Finally, the appendices contain a list of "Emergency" problems to use as part of the training program and a list of "Idea Squelchers" adapted from Davis (1981) and Kaufmann, Fustier, and Drevet (1970).

The sections on motivation and interpersonal skills are excellent, with the latter calling attention to a traditionally underemphasized aspect of creativity. Indeed, this section is the strongest part of the book, full of clever, original activities. The activities for increasing creative abilities in Chapter Three are described in sufficient detail, but they do not seem as promising as those in the previous two chapters. The chapter on overcoming obstacles is appealing because it makes the necessary differentiation between internal and external obstacles. As with the first two chapters, this section should be expanded in future editions. I would also appreciate a smoother English translation (it seems somewhat choppy for an American audience) and the addition of an index.

With the benefit of hindsight, I realize that my anticipation was based upon a desire to see an international perspective on the education of creativity. In this respect, the first paragraph did not disappoint me, as it contains 25 citations from authors in four different countries. Although the suggested activities are based upon the work of the Team of Psychology of Creativity in Cracow, I expected more references *within* the text, especially from European authors. The select citations are predominantly the work of American authors, since the international work cited in the first paragraph is infrequently mentioned throughout the rest of the book. However, even the references to American authors and their work are quite dated, with less than five after 1982, and no references later than 1987.

With the current 'intellectual boom' in creativity theory and research, the omission of current work is the book's main weakness. The recent work being done with divergent thinking (Runco, 1991), creativity theory (Gardner, 1993; Runco & Albert, 1990; Sternberg, 1988), and economic theory (Runco & Rubenson, 1992; Sternberg & Lubart, 1991) all have a substantial impact upon creativity training. In the final analysis, I expected an international perspective on "creativity training," but the book delivered an international interpretation of *American* work on the education of creativity. As a result, most Western readers will find the ideas and suggested activities to be largely familiar. However, I still recommend the book for two reasons: first, the section on interpersonal aspects of creativity; and, second, the book's historical significance as an indicator of the creativity work currently being done in Poland.

Note: Necka, E. (1992). *Creativity Training: A Guidebook for Psychologists, Educators, and Teachers.* Kraków, Poland: TAiWPN "UNIVERSITAS" (160 pp.). ISBN 83-7052-092-8 is available directly from the author at the following address: Jagiellonian University, Institute of Psychology, ul. Golebia 13, 31-007 Kraków, Poland.

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Creativity: How Can it Benefit At-Risk Students?

Research indicates that creative potential is very widely distributed among all students. Explore the multifaceted nature of creativity. Learn to nurture diverse expressions of creativity. Discover the role of motivation in creative productivity. This report highlights the importance of creativity as an educational objective for economically disadvantaged students and presents fourteen research-based recommendations to help you enhance creative thinking.

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- **How can teachers help students appropriately channel their creativity in the classroom?**

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Dynamic Assessment and Its Use With High Ability Students

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Most school districts restrict their selection of identification instruments to measures tapping academic aptitude, such as intelligence and achievement tests, grades, and teacher ratings/recommendations. The result, writes Richert (1985), is that certain groups of students are consistently underrepresented, including: "(a) underachieving, poor and minority gifted children who most need programs to develop their potential; (b) the creative and/or divergent thinkers whose abilities are not tested by standardized intelligence or achievement tests or grades; and (c) other groups including the learning disabled or handicapped gifted." (p. 70)

A relatively new approach to assessing ability is to ask students to respond to a problem situation, provide assistance to help them improve their performance, and then measure various indices of improvement in their performance on similar problems. This approach is called dynamic assessment (Feuerstein, 1979). Different dynamic assessment models have been researched (Lidz, 1987), including assessment via assisted learning and transfer (Campione, 1989) and testing the limits (Carlson & Weidl, 1979). Campione (1989) explains that the common feature of these models is an emphasis on the individual's potential for change.

Definition of Dynamic Assessment

Dynamic assessment is a diagnostic procedure that takes into account the context of the testing situation and the ability of the examinee to learn from experience. Lidz (1991) described it as

> a test-intervene-retest format. The specialist first administers a static pretest to establish a level of performance, then provides interventions to try to produce changes in the examinee, and then retests on the static test in order to assess degree and nature of change...A second definitive characteristic of a dynamic assessment is the focus on learner modifiability. "Modifiability" involves both the amount of change made by the learner in response to the interventions provided, and the learner's increased implementation of relevant metacognitive processes in problem solution. (pp. 4-5)

The importance of the unique format and focus of dynamic assessment is that the potential of students who come from disadvantaged populations or who are disabled in some way is directly assessed. Although a student's disability or background may be taken into account in usual testing situations through a weighting formula or by comparing the student's performance to others with similar characteristics, at best this offers an indirect means of assessing potential in these groups of students.

Dynamic assessment can be conducted in a formal, standardized manner or informally with individuals or small groups of students. A student can be assessed by recording the number of trials or amount of time needed to elicit correct performance, evaluating the quality of the response and the amount of intervention assistance needed to obtain a correct response, and the types of cognitive strategies used and extent to which the student understands the nature of the problem situation. This latter information is based on the student's spontaneous or elicited comments.

Static and Dynamic Assessment

The theoretical foundation for the development of the dynamic assessment approach comes from Vygotsky's (1978) conception of the "zone of proximal development (ZPD)." From the Vygotskian perspective, potential is defined by the ZPD. Lidz (1991) writes that

> the ZPD concept refers to the idea that a child has some fully matured processes that are evident when the child is assessed by traditional means, as well as emergent developmental processes that can become evident when the child interacts with a more knowledgeable partner. The ZPD is the difference between the child's level of performance when functioning independently and the child's level of performance when functioning in collaboration with a more knowledgeable partner. This can also be viewed as a definition of "potential." (p. 7)

Static assessment methods are those that measure student ability by presenting test tasks that the examinee must solve or answer by accessing previously acquired knowledge and skills without any assistance. Dynamic assessment methods are those that allow the examinee to benefit from prompting and active support from the examiner. In static assessment, the most important acts the examiner does are to administer the test and accurately record the number of test items answered correctly. In dynamic assessment, the examiner is more focused on discovering the type of intervention that improves the examinee's performance on the test tasks.

Static and dynamic assessment methods should be considered complementary and not antagonistic means for estimating potential. Static assessment devices help us to understand how well a student has benefited from previous educational treatments, interventions, and experience in general. This information allows us to gauge a student's background knowledge and skills. However, a student who has had an advantaged and enriched education could demonstrate a high level of achievement, yet have average ability. A student from a disadvantaged background showing a similar level of achievement may be demonstrating a higher level of ability.

Application of Dynamic Assessment in Gifted Education

It might be possible to train teachers to set up dynamic assessment situations in which certain types of performance are taught and then have them look for students who outperform their peers. Renzulli, Reis, and Smith (1981) applied the concept of dynamic assessment in developing the Revolving Door Identification Model (RDIM) to increase the number of creative-productive gifted students receiving gifted education. When a teacher of the gifted determines that a student in the "talent pool" has demonstrated a high level of domain-specific aptitude after receiving Type II enrichment (see Renzulli, 1977), a form of dynamic assessment is being used.

The decision to label a child gifted and talented is based on data that is interpreted against the backdrop of some value system. Those who most highly value academic giftedness, also called "schoolhouse giftedness" (Renzulli, 1986), will perceive only those students who excel on classroom assignments and achievement tests as being gifted. These are the students who are usually nominated by teachers to take the aptitude or intelligence tests on which the final labeling decision is based. Yet, recent research shows that when all students are allowed an opportunity to participate in an enrichment program, highly creative students perform as well as gifted students, even though they didn't score high enough on aptitude tests to be selected for the gifted program (Kirschenbaum & Siegle, 1993).

Teachers will not nominate "creative-productive gifted" students (Renzulli, 1986) for a gifted program if the final selection decision is based solely on whether a student can meet a cut-off score criterion (Hunsaker, 1992). Hunsaker (1992) found that the school systems he studied relied on test scores as the "bottom line" in deciding who was gifted, although they avowed the use of multiple criteria. Teachers felt that they had limited influence on the identification process. Hunsaker suggests that a change in focus to looking at individuals rather than just test scores is necessary before teachers will feel they have some influence on who is selected for gifted programs. Dynamic assessment is a means by which teachers can document the ability of students to benefit from instructional interventions such as enrichment activities. This is particularly valuable if we want teachers to refer students who demonstrate creative thinking ability in their classes.

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Breaking the Barriers: Recently Published Resources on Women in Math and Science

(and how to evaluate them)

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As awareness and concern slowly grow with respect to the barriers young women face in math and science, classroom resources are becoming more plentiful. Very few recommendations have appeared, however, for how educators and parents should evaluate these materials. The following questions are suggested as guides for any evaluation of gender equity resources in science and math, especially those that attempt to introduce potential, female 'role models' in scientific and mathematical fields.

When dealing with role models:

- Are potential role models presented?
- Do the role models represent variety with respect to:
  - -the range of scientific and mathematical disciplines?
  - -the time period in which they lived and worked?
  - -their childhood experiences?
  - -the path they followed (or blazed) to become a scientist or mathematician?
  - -their racial, ethnic, and/or socio-economic status?
- Is each person's background described in light of his or her decision to enter a quantitative field?
- Do the profiles of the scientists and mathematicians contain an appropriate balance between their positive experiences and the difficulties that they faced?

With respect to the activities and the format of the material:

- Are "hands-on" activities included (and explained at an appropriate level)?
- Are the activities based upon each profiled individual's work?
- Are the activities relatively easy to administer?
- Is the text interesting and highly readable?
- Are additional resources suggested?

Review of Recently Published Materials

While any evaluation should be tailored to meet one's individual needs, I have found that the above questions are usually asked by teachers who have experience in creating or maintaining an atmosphere of gender equity in their classrooms. When evaluating more than one resource, one may find it helpful to construct a grid (see Figure 1) based upon the evaluation questions.[1] With this in mind, a review of three recently published materials on women in science and math follows:

From sorceress to scientist: Biographies of women physical scientists

Kevin Allison Nies (1990)
California Video Institute, P.O. Box 572019,
Tarzana, CA 91357

This publication has the look and feel of a workbook, which is quite appropriate considering its format and purpose ("to supplement textbook materials in the physical science curriculum at the junior and senior high level", p. i). Each of the nineteen profiles of individuals (e.g., Hypatia, Mary Somerville) and groups (wise women & the first calendars, the queens of crystallography) is followed by at least one suggested lab, demonstration, or other activity. Some of the activities are merely crossword puzzles or worksheets, but the majority are demos or labs (supervision is necessary in some cases). This book is the best resource I have found that discusses the lives/work of women scientists *and* provides pertinent activities for students to enjoy.

Women and numbers: Lives of women mathematicians

Teri Perl (1993)
Wide World Publishing/Tetra, P.O. Box 476,
San Carlos, CA 94070

Eleven profiles of female mathematicians or computer scientists are included in the latest effort by the author of *Hypatia and Her Sisters*, with two to four activities following each profile. These enrichment activities are often creative and stimulating, although some are merely pencil-and-paper worksheets. The book is very readable, but I often had the impression that a more in-depth analysis was lost because of this. For example, Perl notes that Boole's most significant contributions occurred after her husband's death, when she obtained a job based upon her own merits. At that point, the opportunity exists for a discussion of the difficulty of family-career balance and the possibility of productivity throughout the life-span; but this and other similar opportunities are missed. Another, minor criticism deals with the sections describing the EQUALS project and the Expanding Your Horizons conferences. The descriptions of these two programs, which seek to increase the participation and performance of young women in math and science, seem out of place—the only audience that will benefit from these sections (or find them remotely interesting) are those individuals who are starting their own intervention programs—definitely not the group benefiting from the first 11 sections.

Women scientists

Nancy Veglahn (1991)

Facts On File, 460 Park Ave. South, NY, NY 10016;
also available from the National Women's
History Project.

This reference book is strongest when it discusses each woman's achievements and tribulations against the backdrop of her youth and family life. However, Veglahn occasionally uses a didactic format (i.e., one which appears to just list certain accomplishments), which would probably make the text disinteresting for some younger children. "Further Reading" lists are provided after each of the 11 profiles, and each cited work is briefly described in one or two sentences. An index and chronologies are also provided, features which are missing or underdeveloped in the other two books. However, as *Women Scientists* is meant to be a work of reference (and the other books are more activity-oriented), this difference is understandable.

Discussion

As you conduct your own evaluations of gender equity materials, keep in mind that each resource aims to accomplish different goals and, therefore, has its own strengths and weaknesses. Of the books reviewed here, *Women Scientists* is meant to be a secondary reference book, while *From Sorceress to Scientist* and *Women and Numbers* introduce potential role models and reinforce each woman's contributions through activities based upon her work. As with any materials used in the classroom, teachers need to adapt these resources into their curriculum as they see fit.

When teachers of grades K - 6 search for gender equity material, they are usually disappointed with the results. Most resources, especially those in math and science, are written for the middle and high school years because many of the problems that young women face begin to surface at this time. However, the foundations of these difficulties are formed much earlier, perhaps during the preschool years. Hopefully, authors and publishers will realize this in the near future and begin to market quality materials for preschool and elementary school children, educators, and parents. Meanwhile, educators and parents may want to adapt the best resources for middle/high school into a form suitable for the younger children with whom they interact.

Title *Author* Publisher	Age level	Role Models					Activities				Readable, interesting text?	Additional resources suggested?
		Role models included?	Discussion of societal atmosphere?	Variety?	Connection between background & decisions?	Positive and negative aspects?	Activities included?	Activities linked to biographies?	Easy to administer?	Explained well?		
From Sorceress to Scientist ***Kevin Allison Niez*** **California Video Institute**	Grades 6 - 12	Yes	Yes	Yes *1	Yes	Yes	Yes	Yes	Yes	Yes	Very	Yes: a variety of books, videos, & computer programs
Women and Numbers ***Teri Perl*** **Wide World/Tetra**	Grades 5 - 9	Yes	Yes	Yes *2	Yes	Yes	Yes	Yes	Yes	Yes	Very	No: although the EQUALS and Expanding Your Horizons programs are described in detail
Women Scientists ***Nancy Veglahn*** **Facts On File**	Grades 6 - 12	Yes	Yes	Yes *3	Yes	Yes	No	N/A	N/A	N/A	Yes	Yes

Comments:

*1 - The female scientists and mathematicians are representative of a wide range of scientific and mathematical disciplines, time periods, and racial and ethnic groups.

*2 - The mathematicians in this book are representative of a wide range of mathematical disciplines, time periods, and racial and ethnic groups.

*3 - The scientists in this book are representative of a range of scientific disciplines and time periods.

Figure 1
Evaluation Matrix for Science/Math Gender Equity Materials

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[1] Blank, elaborated copies of the evaluation matrix are available at no cost and may be copied without limit. Send a self-addressed, stamped envelope c/o the author to NRC/GT, The University of Connecticut, Box U-7, Storrs, CT 06269-2007.

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Newsletter
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When "Differentiated" Becomes Disconnected From Curriculum

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A common phrase in the field of gifted and talented education is "differentiated curriculum." Sometimes the adjective "differentiated" becomes disconnected from the noun "curriculum," and we find program offerings for high ability students that do not focus on curricular options. Students just have *different* things to do without any consideration for their entry level skills or behavioral characteristics. The assessment of such skills or characteristics is usually achieved by an elaborate screening and identification system that includes behaviors, anecdotes, performances, portfolios, tests, or ratings. Whatever form the records on each student may have taken, careful thought and documentation are integral to the process. Once the identification process is finalized, however, the data sometimes become inert. The data are not always the basis for future educational opportunities. It is important to pose the following question as part of the identification process:

> How are these data going to be used to develop curricular options for high ability students?

Years ago, Virgil Ward (1961) coined the term *differential education* for the gifted. He laid out a series of principles to guide the design of curriculum that would challenge the minds and abilities of students whose talents represented a wide spectrum. In later years, differentiated education or differentiated curriculum were the popular terms, as educators discussed educational opportunities for students. Differentiation gained a permanent place in the educational lexicon with the publication of the Marland report (1972). The report stipulated that gifted and talented students "require differentiated educational programs and/or services" (p. 2). This requirement was not explained in great detail. Educators "filled in the gaps" by rethinking earlier ideas or proposing new plans for differentiation.

The literature in the field is now replete with descriptions of differentiation. Categorical approaches of content, process, product, and affect are used by Kaplan (1986). These categories provide the basis for learning experiences. The resulting learning experiences are considered differentiated because they are a match among student needs, abilities, interests, and educational purposes. Kaplan reminds us, however, that "differentiation of curriculum and individualization of the curriculum are not similar. Once the curriculum is differentiated, it needs to be individualized for students"(p. 192).

Lists of principles of differentiation are also popular. Kaplan (1979) developed a framework for designing or developing curricular options. The principles included:

- Allow for indepth learning of a self-selected topic within an area of study
- Develop productive, complex, abstract and/or higher level thinking skills
- Encourage the development of products that challenge existing ideas and produce "new" ideas

Putting these principles into action is not an easy task. Curricular systems and models have been developed to address these principles

(Continued on page 2)

(Continued from page 1)

and others to varying degrees (see Renzulli, 1986). We can adopt or adapt the systems and models as necessary, but the extent of this practice is in question. Results from several research studies conducted by The National Research Center on the Gifted and Talented have documented the limited extent to which curricular options are made available to gifted and talented students.

The Curriculum Compacting Study (Reis et al., 1993) illustrated that teachers could successfully identify students whose academic needs warranted curricular modifications. They could also use the compacting procedures to eliminate a modest to substantial amount of curriculum and still ensure the maintenance of skills over time. Teachers were very adept at the identification process and the instructional strategies, but, in some cases, they needed more help with designing or developing challenging curricular options.

The Classroom Practices Survey (Archambault et al., 1993) and the Classroom Practices Observations (Westberg et al., 1993) also pointed to the lack of attention to curricular options for students in third and fourth grade classrooms across the country. Archambault et al. (1993) summarized the results of survey data as follows: "It is clear from the results that teachers in regular third and fourth grade classrooms make only minor modifications in the curriculum and their instruction to meet the needs of gifted students" (p. 115).

Westberg et al. (1993) extended the survey to classroom observations. The observations supported the survey results. The researchers concluded that "despite several years of advocacy and efforts to meet the needs of gifted and talented students in this country, the results of this observational study indicate that little differentiation in the instructional and curricular practices is provided to gifted and talented students in the regular classroom" (p. 139).

Is it a matter of not knowing how to design curricular options, or are there so many competing priorities that attention is driven away from creating options and towards meeting the basic requirements of the district's curricula? Oftentimes, the coverage of material has become the standard for accountability without the recognition of the entry level skills of students and their concomitant educational needs. We have to shift our mindset to "less is *often* more." Indepth study of a fewer number of topics can be more meaningful than a cursory glance at numerous topics.

We continue to look at the results of former studies in light of emerging findings of current studies. As new findings become available, we reflect on the growing body of research. We still see a need to raise the following questions about all the data collected in comprehensive screening and identification systems:

- Where have all the data gone?
- How can these data be used to develop curricular options for high-ability students?

We addressed these questions with our first satellite presentation in 1992 on Curriculum Compacting as one approach to the differentiation of curriculum. This was followed by a second approach in 1993 that used the Six-Phase Model for the Explicit Teaching of Thinking Skills. We will continue to emphasize the importance of developing challenging educational experiences for all students. We will follow Feldhusen's advice for our next satellite presentation and develop "fast-paced, high-level, conceptually oriented learning activities, in large, challenging chunks taught in a dynamic and interactive style...." (p. 55). Look for our upcoming satellite presentation on "Curricular Options for High-End Learning" on Wednesday, May 11, 1994. We hope to reconnect the term differentiated to curriculum.

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NEWS Briefs briefs

The Stronghold Foundation is seeking talented at-risk ninth, tenth, or eleventh grade students who would benefit from the college preparatory environment of a private residential school. The foundation provides financial support for at-risk students to attend the Shattuck-St. Mary's School in Southern Minnesota, one of the premier boarding schools in the nation. Applicants should have B or better grades, although having a variety of interests is important. Students are being sought who are able to proceed through advanced degrees and serve as future leaders and role models. For more information and application materials contact: Stronghold Foundation, 3008 Dartmouth Road, Alexandria, VA 22314-4824.

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The *1994 State of the States Report* is now available from the Council of State Directors of Programs for the Gifted. Based on 1992-93 state education agency data, the report covers state legislation, state fiscal requirements, state procedures on assessing and serving gifted students, and the impact of educational reform on services to gifted students. To receive a copy, send a check or money order in the amount of $35, payable to CSDPG to: CSDPG, c/o Donnell Bilsky, 901 Potomac Path, Austin, TX 78752.

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Teachers of grade 1-3 students may be interested in field testing a new interdisciplinary interest center focusing on bears. Educators interested in field testing the activities will receive 15 student activity cards, related resource lists, and an evaluation form. When the evaluation form is returned to the author, they will receive 10 additional student activity cards, a list of suggested informational texts and picture books, and suggestions for large group activities. To receive the free packet of field test materials, send a self-addressed 9" x 12" envelope with four postage stamps to: Debra L. Briatico, 352 Main Street, Bristol, CT 06010.

Computer users with Internet access and a gopher program may now access current research on performance-based assessment being conducted by The National Center for Research on Evaluation, Standards, and Student Testing (CRESST) at UCLA. The Internet gopher server contains the *Alternative Assessments in Practice Database*, which features alternative assessment measures that have been developed by most of the 50 states. In addition to the database, the server contains recent articles on new methods of assessment from the CRESST newsletter and abstracts of over 50 technical reports on alternative assessment. The CRESST Internet address is *gopher.cse.ucla.edu*. For additional information on the server or CRESST publications contact: UCLA, CSE/CRESST, Graduate School of Education, 405 Hilgard Avenue, Los Angeles, CA 90024-1522.

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A comprehensive collection of significant theoretical and empirical worldwide research on the recognition and development of the gifted and talented has been compiled in the *International Handbook of Research and Development of Giftedness and Talent*. The handbook includes contributors from 18 nations and covers the following topics on giftedness and talent:

- historical perspectives and perennial issues,
- conceptions and development of giftedness and talent,
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- present and future education efforts.

This comprehensive handbook is edited by Kurt A. Heller, Franz J. Mönks, and A. Harry Passow and is available for $175 from: Pergamon Press, Inc., Sales Department, 660 White Plains Road, Tarrytown, NY 10591-5153.

• • •

A nationwide research project is being planned for the 1994-95 school year to assess the effectiveness of teacher training on improving elementary students' self-efficacy in mathematics. Participating schools will receive a one-hour video tape on classroom strategies which have been shown to increase student self-efficacy. They will also receive training handbooks for all participating teachers. For more information on becoming involved in the project contact: Del Siegle, The National Research Center on the Gifted and Talented, 362 Fairfield Road, U-7, Storrs, CT 06269, phone 203-486-0617.

High School Experiences of High Ability Males in an Urban Environment

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High ability students from culturally diverse populations have existed in large urban environments for generations; yet many do not achieve at levels appropriate for their ability. Before urban school districts can address the educational needs of culturally diverse populations, educators must acquire a better understanding of these students' educational needs. With this knowledge, policymakers can begin to plan educational programs which will not only effectively meet the needs of this changing population, but which will also improve the educational gains of all students. The problems addressed in this study, therefore, were how high ability students' needs were met in an urban school setting, and what factors distinguished high ability youth who achieved from those who underachieved?

This ethnographic study examined the high school experiences of 12 high ability, male teenagers in an inner-city school in Hartford, Connecticut. Data were collected through participant observation, ethnographic interviews, and document review. Descriptions of culturally diverse high ability students who achieved and underachieved emerged from the data analyses, as well as suggestions for meeting the needs of these high ability teenagers in their urban setting.

Grounded Theory Which Evolved

When examining the everyday challenges that young people in inner-city schools face in their struggle to achieve a better life, we realize that some who reach their goals face greater obstacles than others. A young man living in the projects may go to sleep each night with the sound of drunken neighbors outside his bedroom window, yet he is able to overcome his environment, graduate from high school, attend college, and later help his parents and seven younger brothers and sisters. Another young man who lives in a more peaceful community and faces less hardship may never get beyond the tenth grade. His climb should certainly be an easier journey. Why doesn't he succeed?

The story of the high school student from the inner-city housing project who succeeded is inspirational, and we can assume that he must have developed personal strategies to overcome his adversity that can be shared. There are young people in our public schools who look at life and know what they want. They have developed a strong belief in themselves which provides them with the energy, the drive, and the tools they need to face challenges. This strong belief in self is the driving force which allows them to succeed in school and in later life. They are successful because they have determined who they are, and they have confidence in themselves.

In this study, grounded theory emerged to explain the differences in the life experiences of high ability achievers and high ability underachievers. In the life stories of the high ability achievers in the study, one trait which consistently appeared was a "strong belief in self." Several qualities merged to form this belief: sensitivity, multicultural appreciation, inner will, and aspirations. Part of the strong belief in self was a heightened sensitivity. This quality allowed them to appreciate individual differences in people around them, the beauty of language in a poem, or a relationship with a younger handicapped child learning to swim. They knew they were sensitive and appreciated that quality within themselves. With that sensitivity was an appreciation for people from a diversity of cultures and an appreciation for the racial diversity of their high school peers. They knew that their association with people of diverse cultural backgrounds provided them with more opportunities to understand humanity, and with this knowledge of diverse people, they came to understand themselves and to believe in themselves. Also, they had an inner will that fed the strong drive needed to reach

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for their goals. This strong belief in self naturally incorporated aspirations which included dreams, goals, and visions of a future where they were helping make the world a better place. Through their strong belief in self, they knew they would reach their goals and realize their dreams.

This strong belief in self was reinforced in the high ability achievers in three ways. First, they were supported by a variety of adults who helped them understand that their struggle to succeed was a worthwhile effort. These young men were nurtured by adults who cared, supportive teachers who inspired, counselors who listened and believed in them, and coaches who thought of them as more than just athletes. All of these adults impacted how these students saw themselves and whether they would achieve their goals. Along with adults who cared, they had families who supported them and their abilities. One young man had a family who prayed together and provided him with a deep spirituality. Others had parents who faced economic hardships but believed that tomorrow would be better and helped inspire their sons to believe that they too would see a better day. Along with their strong families and other supportive adults in their lives, these young men became involved in a variety of experiences which allowed them to develop their talents and to be exposed to the world beyond their urban communities. The combination of family support, support from significant adults, and experiences in which they began to see themselves as valued individuals strengthened their belief in self until they knew they were well prepared to succeed.

While the achievers in this study were successful in high school, a second group of high ability young men was not. The perplexing issue is why these young people who came from a similar environment, had similar cultural backgrounds, experienced similar types of families, and had similar access to support systems in their school and community did not succeed. They vacillated in their journey, became filled with despair, were confused, and eventually ended up losing site of their goals.

The high ability underachievers shared life stories filled with negative curricular and counseling experiences which were combined with problematic family issues. These problems grew

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more serious and had a rippling turmoil effect on the their high school experiences. The students grew to dislike school when they encountered teachers who did not address individual learning styles by modifying the curriculum to meet their needs. Issues at home, such as being overshadowed by a very intelligent, outgoing older sister or a straight A younger brother; a parent who drank heavily; or a religious belief system that was out of alignment with the values system of older siblings compounded the problem. All of these issues caused turmoil in the daily experiences of the young men who were already facing a dismal experience in school. The problems grew worse as the underachievers turned to the negative environment of other young people very much like themselves for excitement and a sense of well being.

One young man was intrigued with gangs, while another and his peers were in constant trouble in study halls and in the in-house suspension center. Together these young people became behavior problems and faced school disciplinary action. These problems often occurred when they were given too much unstructured time. Since they were not involved in positive experiences outside of their classrooms, they turned to their negative environment and troublesome friends for support. With their lack of positive support, the young men's aspirations became unrealistic or confused. They continued to believe that they might achieve success, while their dismal school experience preempted it. A football player thought college athletic recruiters would overlook his poor academic record and would provide him with a scholarship. Another young man spoke of becoming a commercial artist, yet he did not respond to his art teacher's advice concerning his art assignments. High school for these young men became a very tedious and upsetting experience, and they continued to look for direction as they struggled each day with the problem. Without direction and without a strong belief in self, they may never be able to determine goals and aspirations, and their experiences will likely dissipate into a life of unfulfilled potential.

Implications

High ability students in urban high schools across the country have educational needs which must be addressed if we are to help them reach their full potential. High school educators in urban settings must deal with the question of how to provide their high ability students with an educational program which will best provide for their needs. The following recommendations were made for the high school involved in this research, and they may be applicable to other urban schools.

- *Reorganize schools to allow for smaller high school student populations.*

In smaller schools, faculty and staff members would be better able to grasp the educational needs of the students and fewer students would be lost in the shuffle. Counselors would have more time to become familiar with the students and to provide them with more appropriate educational programs. In its reorganization, the urban school system should implement magnet schools in the visual and performing arts, sciences, and industrial technology. These alternative programs would provide a stronger match between student learning styles and curriculum.

- *Employ a talent development specialist to facilitate appropriate educational programs for high ability students.*

The talent development specialist could work closely with administrators, teachers, and counselors in planning programs. The specialist would also work with identified high ability underachievers and their teachers in a proactive manner.

- *Conduct staff development sessions focused on the identification of high ability underachievers.*

This training would help counselors and faculty members develop appropriate intervention programs for this population.

- *Provide strong after school extracurricular experiences and athletic programs to nurture the special interests and talents of high ability youth.*

Continuation of programs such as Upward Bound and summer enrichment programs associated with private colleges and state universities should be emphasized and strengthened.

- *Provide inservice for coaches in academic counseling and motivational strategies.*

A system to consistently monitor academic progress of all athletes should be implemented by the athletic department. Such a system would ensure more than basic eligibility for participation in sports. Coaches who have successfully kept athletes on task academically should be encouraged to share their strategies with their colleagues in the athletic department.

- *Abolish study halls and replace them with more productive options.*

This would eliminate many of the discipline problems that result from students being bored in study halls. Other options should include tutorial programs, guest lecture series featuring speakers from the urban community, and enrichment minicourses offered to students on a rotating basis. Additionally, workshops for students to plan for postsecondary education should be offered.

- *Develop closer ties with family counseling centers in the inner-city to assist urban parents in addressing the developmental needs of their adolescent children.*

This study is part of a larger, on-going NRC/GT sponsored study of 30 inner-city students.

Evaluation Utilization Studies

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Calls for the evaluation of programs stem from a strong belief that the evaluation process will generate data useful in the process of program improvement and development. However, evaluation data and reports that are not used serve no purpose whatsoever. Hence, recent studies at the University of Virginia have addressed the issue of evaluation utilization in programs for the gifted. The first study (Hunsaker & Callahan, 1991) examined current trends in evaluation of gifted programs. A review of 70 evaluations collected from school districts across the nation reveal several distinct trends.

- Most gifted program evaluations use summative evaluation.
- Administrators determine the evaluation questions.
- Data primarily reflects opinions about the program and are gathered solely through questionnaires.
- Evaluation designs do not reflect current thinking about what constitutes effective gifted program evaluation.

These trends are at variance with recommended practice for evaluation utilization.

To understand and describe which factors do contribute to evaluation utilization in gifted programs was the purpose of an extension of the descriptive study of Hunsaker and Callahan. First, through a review of the general and gifted education evaluation utilization literature (Tomlinson, Bland, & Moon, 1993) two sets of factors affecting utilization were identified:

- Factors which are not under the evaluator's control (such as economic and political conditions).
- Factors which evaluators can control (such as design, audience identification, dissemination, and quality of evaluation).

Then, through a series of case studies of 12 school districts selected on the basis of complete and thorough evaluation reports, we were able to conclude that an intent to evaluate and a prescribed evaluation procedure result in the use of the findings for positive program change. However, a continuum of differences in utilization exists based upon the extent to which good evaluation practices are used. From these findings, several suggestions follow:

- Make evaluation a part of planning from the earliest stages of program development.
- Develop clear program descriptions and goals.
- Provide adequate funding for evaluations and adequate time for evaluation procedures to be followed.
- Prepare staff for conducting and analyzing the results of the evaluation.
- Clearly identify all audiences that have an interest in or need for evaluation results, and involve them in the full evaluation process.
- Ask questions which are well focused to provide information about the goals, structures, and activities of the program being evaluated–questions which will aid in making significant program improvements.
- Use multiple data sources in order to understand the values and perspectives of varied groups of stakeholders.
- Develop evaluation designs which address complex issues of measurement in programs for the gifted.
- Use a variety of data gathering methods designed to reflect the unique structure and goals of programs for gifted learners.
- In evaluation reports, fully describe procedures for data collection and interpretation so that audiences understand processes which were followed and conclusions which were drawn.
- Disseminate to all appropriate audiences reports which are timely and designed to encourage follow-through in translating findings into action. Develop a specific plan for turning findings into positive program growth as an essential part of each evaluation, including roles which various program personnel, evaluators, and stakeholders will play in that plan.

Also emerging from this study is the need for training of personnel in gifted education program evaluation.

For more complete descriptions of these studies see:

Hunsaker, S. L., & Callahan, C. M. (1991, November). *Trends in the evaluation of gifted programs.* Paper presented at the meeting of the American Evaluation Association, Chicago, IL.

Tomlinson, C., Bland, L., & Moon, T. (1993). Evaluation utilization: A review of the literature with implications for gifted education. *Journal for the Education of the Gifted, 16*(2), 171-189.

Tomlinson, C., Bland, L., Moon, T., & Callahan, C. (1992). Designing user-friendly evaluations for programs for the gifted. Manuscript submitted for publication.

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Emotional or Behavioral Disorders: Classroom Conflicts

Terry W. Neu
Project High Hopes
Hamden, CT

Jake

Jake wears his sandy hair short and he is well built and dresses fashionably. Yet, his clothes show the signs of wear around the knees one would expect of an active young boy. Jake is twelve years old and is the youngest in the family of five children. After several years of behavioral problems in school, Jake was diagnosed as Attention Deficit with Hyperactivity Disorder (ADHD) at a state children's hospital. Jake received educational support services from a special education teacher. He was also involved in the gifted education program. The classroom teacher chose to restrict Jake's access to the gifted education program as punishment for inappropriate classroom behavior. Jake has a full scale IQ score of 141.

Ethan

Ethan is a tall, slim thirteen year old seventh grader. His hair is cut short but tends to stick out from his head. He wears glasses and appears to look like the stereotypical gifted student. He enjoys baseball, is active in the Boy Scouts, reads constantly, and is involved with building models from plastic airplanes to Estes rockets that fly 1000 feet high.

Ethan's kindergarten teacher first reported behavioral difficulty in the classroom. This resulted in a psychological assessment that determined no special services were needed at the time. In third grade Ethan was simultaneously recommended for the gifted program and for special education. Subsequently, Ethan was recommended for special education and denied entry to the gifted program due to his hyperactivity. Ethan has been identified as having ADHD by a local physician. He receives special education services while being classified as having a specific learning disability in writing skills. Ethan has a full scale IQ score of 135. He has been prescribed Ritalin and receives two doses each school day.

Gifted Students With Emotional or Behavioral Disorders

Gifted students have often been considered immune to Emotional or Behavioral Disorders (EBD). Unlike Jake, most high ability students who are also classified as having an EBD condition are eliminated in the identification process or disqualified due to classroom behavior or hyperactivity (Baum, Owen, & Dixon, 1991; Davis & Bull, 1988). In the case of Ethan, a second area of exceptionality was identified.

To learn more about twice exceptional individuals, 10 students who have simultaneously demonstrated gifted behaviors and those characteristics associated with EBD as defined by Forness and Knitzer (1990) were sought for participation in a recent study (Neu, 1993). EBD refers to a condition in which behavioral or emotional responses of an individual in school are so different from his/her generally accepted, age-appropriate, ethnic or cultural norms as to result in significant impairment in self-care, social relationships, educational progress, classroom behavior, or work adjustment.

Several students in the study by Neu were identified by professionals as having Attention Deficit with Hyperactivity Disorder (ADHD), or oppositional defiant disorder, and in most cases were also diagnosed with a specific learning disability. Some of these students were also identified as gifted by their local school system, but few actually received the services of a gifted education program.

Methodology

Qualitative methodology, including open-ended interviews, document review, and naturalistic observations of the classroom, guided the research. The researcher spent a minimum of three days in the classroom of each student as well as interviewing the parents, the students, and their teachers.

The Student in His Environment

The students in this study spent seven hours of the day, five days a week in the educational environment. The behaviors of two of the students will be highlighted.

Jake sits in a reserved seat in the front of the class next to the door. While this prevents him from interfering with other students, unfortunately it is very close to the coat rack which provides Jake with several opportunities for distraction.

The classroom teacher sits at the back of the room with her desk facing the blackboard. The student desks are aligned in five rows all facing the board. The board is covered with the day's

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assignments. The students work on assignments while other members of the class attend a reading group which is held at a large table located near the windows. Jake appears to be extremely bored.

Ethan

Ethan's time in the special education resource room is shared with four students at the long work table. The student next to Ethan engages him in conversation on occasion, but they are not friends. Ethan sits with his back to the wall and leans his chair back on two legs, until the teacher corrects his position. Ethan spends little time on the class assignment, while the teacher works with other students.

Dead Time

During data analysis, recorded observations were coded for recurring themes. It became apparent that participants in this study experienced a large amount of time in school that was noted for the lack of student engagement. In the classroom observation of these students this phenomena was entitled "dead time." Dead time owes its origin to two sources: the teacher's use of instructional strategies and the high intellectual ability of the students. Because these students were bright, they often completed their work in less time. The material was assigned to all members of the classroom, without consideration for the advanced abilities of some students. The students in this study finished this work before their peers and entered a period of dead time. With dead time, student energy had no outlet in the classroom, and off-task behaviors occurred. The interrelationship of their high abilities, the emotional or behavioral disorder, and their academic environment contributed to excessive dead time.

For Jake dead time usually occurred when the students were called to their reading groups, and Jake and his other classmates should have been engaged in working the math problems on the board. Jake had difficulty starting the task. He talked to his neighbors or shuffled through the pile of papers in his desk until the teacher left the reading group to help Jake begin the math problems. He finished his work much earlier than his peers, and began looking for challenging work

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on his intellectual level to engage his time. Finding nothing stimulating, Jake glanced toward the classroom teacher to check her position. She was busy with the last reading group. Jake then moved toward the teacher's desk. After a few moments, the teacher noticed Jake and told him to return to his desk. Jake did not respond and continued to manipulate an egg timer on the teacher's desk. The teacher called a second time, and Jake gave no response. The teacher called Jake the third time and then started to approach him. Jake then placed the timer behind a stack of books on the teacher's desk. The students filed out of the room to go to music and Jake looked back as he left the room with an unusual smile on his face. The egg timer subsequently went off during the interview with the researcher.

> *...escalate the level of curricular opportunities; otherwise these students will camouflage their high abilities...*

Ethan was also diagnosed with ADHD and dead time typically occurred around inappropriate instructional practice in the resource room. When Ethan was confronted with inappropriate remediation, he displayed the classic manifestations of EBD behaviors which were noticed by his teachers as seen in the following description:

> Ethan received remediation in writing skills for his diagnosed learning disability in the resource room. The 50 minute period consisted of direct instruction of descriptive writing skills. Ethan had a paper clip that kept him amused for 10 minutes. He twisted it out of its original shape and invented new shapes. Ethan cleaned his finger nails with it and then would bend it around his pencil. The paper clip proved to be much more interesting than his assigned task. Ethan finally turned to the required assignment and finished quickly. Ethan occupied himself the last 15 minutes of class by reading an article in *The National Geographic.*

Behaviors Observed

These short scenarios depict emotional or behavioral disordered behaviors commonly used in the identification of ADHD (American Psychological Association, 1987).

- often fidgets with hands or feet or squirms in seat
- has difficulty remaining seated when required to do so
- is easily distracted by extraneous stimuli
- has difficulty following through on instructions from others
- has difficulty sustaining attention in tasks or play activities

At the same time, these students demonstrated above average abilities. Both of these students completed unchallenging work quickly, and in most cases before their peers. They also completed work accurately and, in some cases, Ethan's other teachers even used his worksheets as an answer key to correct his peers' papers.

Conclusion

When Jake and Ethan hit dead time, EBD behaviors drew the teacher's attention. In both cases, the regular classroom instruction was below the intellectual needs of the individual student. Jake and Ethan had difficulty starting their work, yet still finished work before many of their peers. The challenge, then, for educators is to escalate the level of curricular opportunities; otherwise these students will camouflage their high abilities and enter into "dead time."

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HyperCard and Image Processing as Vehicles for Gifted/Talented Students

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CAI•21
Billings, MT

The use of technology, particularly hypermedia—an electronic text and image processing system in which text and images can be integrated and accessed in either linear or nonlinear projects—is invaluable because it provides a means by which learners may use a variety of intelligences (Gardner, 1986) in their explorations of information and ideas. In 1988 Apple Computer set up its Apple Classrooms of Tomorrow (ACOT) research project to explore learning when students and teachers have immediate access to interactive technologies. To pursue this research focus, ACOT established technology rich classroom sites and encouraged teachers to develop new curriculums and methods of instruction that take advantage of the technology.

Commentary

The preliminary results of several four-year longitudinal ACOT studies provide evidence that interactive technologies may be a useful tool to solve some of the problems that exist in our current educational system. ACOT teachers report that their students become increasingly more curious and assertive learners when they have technology at their fingertips. The teachers claim that their students are no longer reluctant to take on new challenges; in fact, the students often pioneer selected topics far beyond the given assignment, just for fun (Baker, Gearhart, & Herman, 1990).

So what does all this have to do with gifted and talented education? In a survey of gifted and talented students, Betts (1990) reported that the three main reasons students are dissatisfied with traditional curricula are: classes aren't challenging or interesting, they have no input or control over what they study, and assignments do not allow for creativity. Technology can be a useful vehicle in addressing some of these needs.

The use of technology, particularly hypermedia, is invaluable because it encourages learners to use a variety of intelligences in their explorations of information and ideas. Coupling technology with well-planned activities "turns on" all students to learning, but it especially motivates gifted and talented and at-risk students. Using hypermedia, students can create interactive informational presentations which contain text, images, music, live-action video, live-stills of video, digitized samples of spoken voices, or colorful animations. Thus, many students who had been "turned off" towards school suddenly become excited about their own learning.

As the Instructional Technology and Curriculum consultant for the Northern Lights TeleGeography (NLTG) Project at a middle school in Eastern Montana, I have had the opportunity to observe and work with many students in a high computer access (HCA) environment. Before participating in the NLTG Project most of these students were not motivated or not interested in studying geography. But as they developed computer skills, they became very enthused and excited about their work.

Let me share a typical example with you. A Venezuelan foreign exchange student came to class to share the culture and customs of South America with North American seventh grade students. Among the many topics the exchange student discussed were South American music and dance and their role in the social life of young Venezuelans. Of particular interest to three students in the class was the demonstration of South American dances. These students videotaped a demonstration of South American dances including the mambo, merengue, and lambada so they could use selected footage for a hypermedia project. As they storyboarded their project, they decided that they wanted to include the following elements in their hypermedia presentation:

- maps of various South American countries,
- QuickTime movies of South American dances,
- animated "feet" showing the dance steps involved with the lambada,
- digitized music that went along with South American dance, and
- information about the lambada and South American dances in general.

Before beginning the actual work on their HyperCard stack, the girls decided that they

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needed to research specific items in these dances such as the steps involved, musical rhythms used, and general information about the dances themselves. As they explored library materials about dance, both girls were able to further crystallize their ideas into the form they wanted to present and thus began to create and design their stack.

Once they had completed their research, they began to produce the QuickTime clips of the dances they wanted, digitizing Latin music, producing the "moving feet" animation, and scanning the maps they wanted to use in their presentation. Three students who had always been late to class, disinterested, and generally problematic students were suddenly engaged. They arrived at school early in the morning to work on their project, came to class with objectives for the day, and worked during noon hour and after school. In observing them, I overheard discussions involving problems in animating the dancing feet and ways they might resolve these problems, what information should be presented as text or images, and information about how Latin dances related to a South American country's overall culture.

It was thrilling to see how excited they had become about studying the customs and culture of South America, but the most interesting behaviors that I observed were the processes these girls used to solve their problems as they put their HyperCard project together. The use of computer and video technologies also gives students a feeling of empowerment. Empowerment refers to an internal state in which students see themselves as responsible for, in control of, or the source of their own learning. In the classroom, student empowerment is dependent upon the allocation of power between teachers and students. When students control few elements in the learning environment, their empowerment is low; when they control many elements, their empowerment is high. ACOT teachers report that in their high computer access classrooms, students are able to learn without being taught (in the traditional sense) by the teacher (Tierney, 1989). Tierney (1989) identified the following three classroom conditions that affect the level of student empowerment: task shaping, task size, and task complexity.

The level of student empowerment was high when learners were able to expand, modify, or in some way "shape" their work activities and completed assignments. As opportunities for task shaping increased, so did the level of student empowerment. For example, when students could determine the topic for a report and the sources they would consult, they were more empowered than when a teacher (or set of directions) specified the topic, the sources, and the other elements of the process. ACOT teachers and students claim that when students have control over their assignments, they are more highly motivated and more successful learners (Fisher, 1989).

When students worked on large assignments such as writing a play or constructing a model, they experienced high levels of empowerment. Conversely, when they undertook short assignments such as workbook exercises and flash card activities, students experienced low levels of empowerment. Indeed, as their tasks increased in size, so did the opportunity for empowerment (Fisher, 1989).

Activities that required problem solving and other higher order cognitive behaviors offered greater opportunity for student empowerment. Instead of doing worksheets, answering questions at the end of the chapter in a textbook, or writing traditional text-based reports, students prepare databases of information, spreadsheets and graphs, hypermedia stacks, real-time movie clips, animated presentations, electronic collages, or telecommunications.

Other activities in the HCA classroom that supported high levels of student empowerment included writing a play, keeping a journal, and working on a student newspaper. In all of these activities students relied heavily on their computers. Activities that offered little student empowerment included taking recall tests, completing practice exercises, and listening to large group instruction.

In discussing the South American dance project with each of the girls who worked on the project, I asked them why they were so excited about their work, and each of them said that they were very interested in dance. But they each added there was more to it than that—the main reason they were so enthused was because they were in charge of what went into the project. They also stated that the really "cool" thing was that they had to figure out some things for themselves. There was no cookbook recipe for them to follow, and that made the work challenging and exciting. They each told me it was the first time they had felt that way about anything that had happened in their schooling.

Research has shown that when students are provided with means to creatively express their ideas, they are motivated to learn, and they spend more time on projects (Gardner, 1993). Computer graphics and real-time movies give students the tools to experiment with video to produce images that creatively express ideas. The same can be said of working with digitized sound. Using color Macintosh computers, scanners, videocameras, digitizers, and CD-ROM technology allows students to experiment with different ways to express their ideas.

Referring once again to the South American dance project, the girls who worked on the project told me that being able to create something new was much more appealing than merely reproducing something that already existed in a textbook. They were very excited about and proud of the "dancing feet" animation they had created. The girls commented that actually being able to see the feet move in proper sequence was much more meaningful in explaining dance steps than the "dead" still pictures found in a book.

Although the verdict on the effectiveness of using technology to enhance learning experiences is not final, the preliminary evidence indicates that the use of well thought out image processing activities can be effective in certain situations. But we must remember that good activities allow students to be in control of many of the major decisions that need to be made as the activity unfolds. Students in control of much of their educational process will tend to want to be involved in that process.

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Curricular Options for "High-End" Learning

Observe actual lessons with [illegible]

- Communication and spatial skills using math manipulatives
- Hands-on science investigations with discrepant information
- Whole classroom participation in a problem-based social studies learning activity
- Organizing enrichment clusters for differentiated instruction

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Post NCTM Standards: Why Continue to Provide Special Programs for High Ability Math Students?

M. Katherine Gavin
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Commentary

In 1989 the National Council of Teachers of Mathematics (NCTM) published *Curriculum and Evaluation Standards for School Mathematics* with the hope of revolutionizing mathematics curriculum for K-12 students. Inherent in the Standards is the consensus that students need to learn more mathematics, learn new kinds of mathematics, and learn mathematics in a different way. The major thrust of the Standards is problem solving. "Problem solving (which includes the ways in which problems are represented, the meanings of the language of mathematics, and the ways in which one conjectures and reasons) must be central to schooling so that students can explore, create, accommodate to changed conditions, and actively create new knowledge over the course of their lives" (NCTM, 1989, p. 4). If one picks up a curriculum guide for a gifted/talented program in mathematics, one is apt to find a similar goal. In fact, it is true that the call for revision in the Standards is a call for the use of many skills we formerly considered the domain of gifted programs: problem solving, reasoning, communicating mathematically, creative thinking, and making connections between math and the real world. Topics formerly seen as enrichment for the gifted, such as probability and statistics, are now included as essential to the basic curriculum.

The Standards emphasize that the content outlined is for all students. "Our expectation is that *all* students must have an opportunity to encounter typical problem situations related to important mathematical topics" (NCTM, 1989, p. 9). Why then do we need to provide programs for high ability students? In defense of the Standards, it is important to note that they clearly state that all students are not alike. "We recognize that students exhibit different talents, abilities, achievements, needs, and interests in relationship to mathematics" (NCTM, 1989, p. 9). In the updated draft of their position paper on the Provisions for Mathematically Talented and Gifted Students, NCTM recommends that all mathematically talented students "have access to appropriate curricula and instruction that contributes to developing positive attitudes, furthering their mathematical interests, and encouraging their continuing participation in the study of mathematics" (NCTM, in preparation). In light of these recommendations, let us examine why and how a program for mathematically talented students should be developed.

First, it is important to look at the characteristics of highly able math students to recognize the types of mathematical experiences they will need. This is not a cut-and-dried procedure, because different students make use of different talents at different times. Keeping this in mind, characteristics these students might exhibit would include fast-learning pace, keen observation skills, curiosity and understanding about quantitative information, analytical reasoning skills, flexibility and reversibility of mental processes, energy and persistence in solving problems, ability to transfer learning to novel situations, ability to visualize patterns and spatial relationships, and a mathematical perception of the world (House, 1987). These students certainly need to explore math as problem solving, reasoning, communication, and connections (the hallmarks of the Standards), but they need much more. They need to be on the cutting edge of mathematical and technological discoveries. We have a responsibility to prepare them to become our future mathematicians and leaders in business and science.

Now, the question is how do we address the needs of these students. There are many ways to escalate the level of advancement in each standard. Depending on the talents of the students, the curriculum can be upgraded in terms of pace, depth, breadth, areas of interest, or level of intellectual dialogue. For the precocious student, acceleration through summer programs, course skipping, early college entrance, and curriculum compacting is appropriate. Julian Stanley has been instrumental in developing the Talent Search as a means of identifying students, ages twelve or older, to participate in such programs and has conducted extensive research which verifies the success of these programs (Stanley, 1991). Recently this identification procedure has been extended to students in grades three to five (Lupkowski-Shoplik & Assouline, 1993).

It is important to realize that acceleration of gifted students into a program that does not provide the challenges they need is not the answer! Enrichment is a necessary partner to ensure a stimulating math program. In fact, sometimes enrichment alone may be appropriate to develop the particular talents of the student. This does not mean giving students mind benders or logic puzzles after they have finished their math work. It must be much more—focusing on a well-planned, yet flexible and integrated program of instruction. The depth of the subject matter must be extended with interesting research questions, independent study projects, and simulation activities which include the use of technology. This will encourage students to apply their knowledge to other subject areas and life situations. Mentors and internship programs can further extend this application. The breadth of the curriculum needs to be expanded with introduction to exciting fields such as chaos theory and fractals. Students' interest levels need to be tapped as they become mathematicians, discovering theorems and creating theory. We must dispel the notion that mathematics begins and ends with the Greeks, when, in fact, most of the mathematics known in the world today has been discovered in the last 50 years! (Sheffield, in preparation). Students need to go beyond problem solving to problem posing and finally to creating problems. It is only at this highest level of creation that students will begin to realize their true potential and experience the excitement of mathematical discovery and research. Throughout this process, we need to encourage intellectual dialogue among students of high ability, and be willing, as teachers, to become co-investigators in explorations stimulated by these discussions. Research has shown that this type of interaction invigorates these students and provides the necessary groundwork for mathematical inspiration (Sowell, 1993).

During the middle of a semester, I was asked to team teach a precalculus course already in progress. The teacher's comments to me, when discussing the class, included "using" the boy in the back row as a resource for difficult questions or problems. What an injustice to this young man! In *America 2000: An Education Strategy* (1991), we are given the following imperative: "By the year 2000, U.S. students will be first in the world in science and mathematics achievement." If we are to live up to this commitment, we must continually challenge our mathematically talented students, for it is these students who have the awesome responsibility of shaping the mathematics and science of the future.

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Newsletter
Spring 1994

Improving the Learner/Teacher/Curriculum Connection

E. Jean Gubbins
[illegible]

Several research studies conducted by The National Research Center on the Gifted and Talented have assessed the current status of classroom strategies and practices. Other studies have included an intervention. The Curriculum Compacting Study used a specific approach to modifying students' learning agendas by eliminating or streamlining what is known or what could easily be mastered in a limited amount of time (see Reis et al., 1993). The results of this study provided substantive data on the effectiveness of various approaches to teacher training. It also documented the student learning outcomes after a considerable amount of mastered content was eliminated. If you wish to become familiar with the technical aspects of the study, you can consult the research monograph: *Why Not Let High Ability Students Start School in January? The Results of the Curriculum Compacting Study* (Reis et al., 1993). You could also choose to watch the videotape, *Curriculum Compacting*, summarizing the data (Reis, Burns, & Renzulli, 1992). Or if you just wanted a brief overview of curriculum compacting, you could read our Practitioners' Guide on the same topic (Siegle, 1993).

Our research results are provided in multiple formats for multiple audiences. You choose the level of involvement with the research data, depending on your current needs and interests. We hope the multiple formats will ensure that audiences make the decision to wade through complex tables and charts, witness the process on film, or skim a brief document. There are multiple documents or sources of information about the Curriculum Compacting Study, but other studies incorporating an intervention are in various stages of completion; therefore, details are limited. Brief abstracts of three intervention studies follow:

Preservice Teacher Preparation in Meeting the Needs of Diverse Learners

Carol A. Tomlinson
Carolyn M. Callahan
The University of Virginia

The impact of direct instruction regarding the needs of diverse learners, including high ability students, has been assessed. Preservice teachers have become familiar with strategies of curriculum differentiation to meet students' academic needs. Some of these same teachers have worked with a peer coach to further their experiences with these strategies. In addition, a small sample of preservice teachers will be followed in their first teaching job to determine the longevity of the interventions (Tomlinson & Callahan, 1992).

The Theory-Based Approach to Identification, Teaching, and Evaluation of the Gifted

Robert J. Sternberg
Yale University

The research study identified high school students who were high in analytic, creative, or practical intelligences and involved them in a course in introductory psychology. The study "systematically manipulated identification, instruction, and evaluation of gifted students to determine what would be gained by broadening identification procedures, teaching in ways that are or are not

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tailored to gifted students' particular patterns of abilities, and assessing the students' performance in ways that either do or do not address their particular strengths" (Sternberg & Clinkenbeard, 1993, p. 4).

The Longitudinal Study of Successful Classroom Practices

Francis X. Archambault, Jr.
Karen L. Westberg
The University of Connecticut

The Longitudinal Study of Successful Classroom Practices examines the impact of a program to develop higher level thinking skills among fourth and fifth grade students. Students were involved in the direct instruction of thinking skills at a basic task level related to several content areas: mathematics, science, and social studies. Students were introduced to thinking skills at a complex task level. One group of students used an inductive, technology-embedded approach; another group worked with hands-on simulations. Next year, students will have opportunities to apply thinking skills to advanced research projects, with or without the aid of technology.

These studies and others created experimental treatments that may lead to effective classroom strategies and practices; we will keep you posted! While the results are still unfolding, we wanted to capitalize on the professional experiences of our staff. Therefore, we have developed other resources to help you wend your way through an analysis of promising classroom strategies and practices that may improve the learner/teacher/curriculum connection. The following is a working definition of strategies and practices:

- coordinated series or group of specific activities
- carried out by teachers, students, administrators, or parents
- designed to reach designated goals/objectives
- developed from educational research and practice
- field-tested with students

Our satellite teleconference on May 11, 1994 featured a program entitled *Curricular Options for "High-End Learning."* The resulting videotape and handbook illustrate how to create curricular options for students that are responsive to their known and emerging talents. Four learning events are featured in mathematics, science, social studies, and enrichment clusters. The goal of the learning events is to engage students with the content to such an extent that they achieve a deep understanding. Gardner (1991) states this goal another way in his book, *Unschooled Mind: How Children Think & How Schools Should Teach. Most important from my vantage point are students who possess genuine understanding of the major disciplines and areas of knowledge. (p. 186)*

We designed lessons that would encourage a genuine understanding of the concepts. We also wanted to ensure that the lessons were well within your current instructional repertoire. This was done purposefully. We wanted to start with familiar material that would incorporate Strategies of Curriculum Differentiation (see Chart 1) to achieve high-end learning (Gubbins, 1994).

The phrase "high-end learning" may not be as familiar as curriculum differentiation. It was coined recently by Joseph Renzulli of The University of Connecticut (1994). The phrase goes beyond a list of strategies, and it is truly a philosophical and an educational stance. Our goal for students is to meet and challenge their highest levels of learning potentials. High-end learning does, indeed, incorporate strategies of differentiation. It also promotes a larger vision of developing the talents and abilities of all students.

We have captured various approaches to high-end learning in several content areas for our videotape and accompanying handbook: *Curricular Options for High-End Learning* (Gavin et al. 1994). Two of the four learning events will be described briefly: mathematics and social studies. A sample of the objectives and a list of promising strategies and practices will be provided.

Several years ago the mathematics standards were released by the National Council of Teachers of Mathematics (1989). The application of these standards will transform the classrooms into "...mathematical communities where students can explore together, wonder aloud, and communicate mathematically" (Gavin, 1994, p. 5). For the videotape on *Curricular Options for High-End Learning*, Gavin created a learning event based on a familiar activity using Cuisenaire rods. The standard of interest was mathematics as communication. The instructional objectives in "Mathematical Communication: Build What I've Created" included:

1. The teacher works with a peer coach and views a videotape of a model lesson. The teacher and peer coach adapt the lesson to the current academic needs of the students.
2. Students reconstruct a hidden structure with a given number of Cuisenaire rods in response to verbal cues.
3. Students use critical thinking skills to analyze the similarities and differences between the original structure and the recreated structure.
4. Students assess their accomplishments by photographing the most complex duplication and scripting the directions that were used to build their structure. Documentation is placed in their math portfolio.

Chart 1
Strategies of Curriculum Differentiation

Content

1. Present content that is related to broad-based issues, problems, or themes.
2. Integrate multiple disciplines into an area of study.
3. Present comprehensive, reinforcing, related experiences within an area of study.
4. Delete curriculum that has already been mastered.
5. Streamline curriculum that can be mastered quickly.
6. Organize content to accentuate higher level skills and concepts.
7. Select representative topics that illustrate the basic principles, [illegible], concepts, and methodologies of the field.

Process

1. Encourage the in-depth learning of a self-selected topic.
2. Emphasize independent or self-directed study skills.
3. Encourage the application of advanced research and methodological skills.
4. Focus on open-ended tasks.
5. Promote productive, complex, abstract, and higher level thinking skills.

Product

1. Encourage the development of products that challenge existing ideas and produce new ones.
2. Encourage the application of the methodologies of the discipline to product development.
3. Evaluate student outcomes by using appropriate and specific criteria through self-appraisal, criterion referenced, and standardized instruments.
4. Promote the development of products that focus on real world problems presented to appropriate audiences.

Learning Environment

1. Encourage the development of self-understanding (e.g., recognizing and using one's abilities, becoming self-directed, appreciating likenesses and differences between oneself and others).
2. Encourage self-directed learning to promote the development of independent research studies.
3. Encourage the development of a positive attitude toward creative challenges, investigative activity, and knowledge creation.

Adapted from Passow (1982), Renzulli (1986), and VanTassel-Baska (1989)

The classroom strategies and practices for teachers that promoted engagement in learning were:

- Reflecting on your own instructional techniques through videotaping and then selecting the elements that prompted understanding of the lesson objectives. Sharing videotape results with another teacher during a peer coaching session.
- Using spatial visualization, verbal cues, and written communication to foster a working knowledge of geometric and directional terms.
- Incorporating an assessment technique within the lesson to confirm students' knowledge of the concepts.
- Promoting productive, complex, and abstract higher level thinking skills.

Another learning event on the videotape was: "Creating a Product and Reporting the Findings." This social studies lesson revolved around the development of artifacts or clues for the Artifact Box Exchange Network (Johnson & Reid, no date). The Artifact Box is an interschool project that involves students in advanced research, reference, and reasoning skills through a simulation. Schuler (1994) shared her experience with creating an Artifact Box with a classroom teacher. She worked cooperatively with the teacher as students designed products in multiple formats to represent the life accomplishments of an historical figure. The instructional objectives included:

1. Students read and analyze the writings of the historical figure and design products that will capture the essence of his life.
2. Teacher and students engage in a simulation of a significant event in the life of the historical figure.
3. Students create high quality product forms based on a set of standards and communicate findings to specific audiences.
4. Students participate in the assessment of their learning processes and products.

The students chose Mark Twain as a clue for their Artifact Box and formed interest-based, product development groups. They examined Twain's writings and the writings of others to determine three significant challenges he faced in life. The challenges were the bases for products, including a timeline, videotaped mock interview, a political cartoon, and an advertisement. Each product was evaluated using criteria developed by Samara and Curry (1990). The product critique for the mock interview included:

- explains reasons for interview; describes expertise of person being interviewed
- establishes rapport with interviewee; elicits positive, pertinent information
- asks open-ended questions; asks focus questions
- summarizes key points with questions or statements (cited in Schuler, 1994)

Artifacts representing a challenge faced by Mark Twain were prepared for the Artifact Box. The box will then be exchanged with another school. The task for the receiving school will be to analyze the clues and determine the location, the personality, and the time period for the historical figure. The students who created the clues were involved in problem-based learning through the following steps:

- Stating a challenge and developing a plan.
- Gathering information and organizing information.
- Creating a product and reporting the findings. (Schuler, 1994, p. 18)

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Several strategies and practices were part of the lesson on "Creating a Product and Reporting the Findings." The lesson was one snapshot of a series of lessons that used the following strategies and practices:

- Using multiple instructional techniques to capitalize on students' learning styles.
- Encouraging the application of advanced research and methodological skills.
- Evaluating student outcomes by using appropriate and specific criteria through self-appraisal, criterion referenced, and standardized instruments.
- Providing students with examples of high quality products completed by other students as illustrations of the performance standards.

These lessons in mathematics and social studies were highlighted as examples of approaches to high-end learning. They incorporated strategies of curriculum differentiation, as well as the goal of developing the emerging and known talents of students. The lessons truly "enriched the tapestry of the curriculum" (Parham, personal communication, 1980) by capturing the interest and involvement of students and teachers.

If you are interested in implementing some of the strategies and practices from our intervention studies and videotape, you might have to make some changes in your curricular offerings or instructional styles. Change is not an easy process, but it is needed if we are to escalate the learning opportunities for students. It may be wise to reflect on some lessons in change offered by Fullan (1993):

1. You can't mandate what matters.
2. Change is a journey not a blueprint.
3. Connection with the wider environment is critical for success. (pp. 21-22)

Change is often thought of as a series of steps leading to a well-defined goal. Fullan thoroughly analyzes change and uncovers the forces that hamper the process. It is clear from his work and ours that a vision for schools has to be agreed upon before any change process is initiated. Our vision for schools is that we need to improve the learner/teacher/curriculum connection and promote the emerging and known talents of all students. Achieving this vision means that we need to keep you apprised of promising strategies and practices and share the research-based results as they become available.

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News Briefs

The U.S. Department of Education's Office of Educational Research and Improvement (OERI) recently published a monograph entitled, *The Identification of American Indian/ Alaska Native Children and Youth With Outstanding Talent*. Written by Carolyn Callahan and Jay McIntire, the monograph covers areas of concern and special considerations in identifying American Indian/Alaska Native students with outstanding talents. Some of the topics featured in the monograph include issues of diversity, cultural assimilation or accommodation, biases of testing methods, and selecting and constructing appropriate assessment tools. Copies of the monograph can be ordered for $5.50 each from New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 Ask for document S/N 065-000-00-6421.

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The 20th anniversary celebration of The National Association for Creative Children and Adults will be held in Cincinnati, OH on September 3-5. This year's conference theme is *Early Influences on Future Creativity Productivity*. For registration information write: NACCA 20th Anniversary, 8080 Springvalley Drive, Cincinnati, OH 45236. The association also has a new creativity information brochure available. To order the brochure send a self-addressed stamped envelope and $1 to NACCA at the above address.

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Teachers of gifted students in grades 5, 8, or 11 and Advanced Placement U.S. History instructors from New York, Connecticut, Pennsylvania, New Jersey, or Massachusetts are invited to apply to attend a free three-day training in Project LEGAL. The training involves using problem solving and critical thinking skills to teach students about legal issues. Supported with a grant from the National Diffusion Network, the workshop will take place August 31-September 2 in Callicoon, New York. Teachers interested in applying for the free workshops should contact Jim Carroll, Project LEGAL, Syracuse University, The Maxwell School, 513 Eggers Hall, Syracuse, NY 13244, phone 315-443-4720.

Classroom teachers who are interested in participating in an on-going study of attitudes towards creativity and evaluation of creative products should contact: Jonathan Plucker, The National Research Center on the Gifted and Talented, Curry School of Education, Emmet Street, Charlottesville, VA 22903. Involvement in the initial phase of the study will require a minimal time commitment of 5 to 10 minutes.

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The Center for Research on Educational Accountability and Teacher Evaluation (CREATE) is conducting its third annual National Evaluation Institute on July 10-15 at Gatlinburg, TN. Institute sessions will focus on teacher evaluation, administrator evaluation, support personnel evaluation, school report cards, and program evaluation standards. Participants will work with nationally known evaluators and educators, including Peter Airasian, Arlen Gullickson, Virginia Helm, Richard Jaeger, James Sanders, William Sanders, Michael Scriven, James Stronge, and Daniel Stufflebeam. For registration information, contact: Sher Keller, The Evaluation Center, Western Michigan University, Kalamazoo, MI 49008, phone 616-387-5895, fax 616-387-5923.

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The nonprofit Gifted Child Society announces the opening of the nation's only information hotline specifically for parents of gifted children. The Parent Information Network for Gifted (PING) offers weekday on-line phone consultation from 9 a.m. to 4 p.m. Eastern Time. In addition to answering specific questions, they also provide complimentary follow-up materials, suggestions about suitable reading materials for specific situations, and the names, addresses, and telephone numbers of state organizations and consultants. The service is available for $3 for the first minute and $2 for each additional minute. The hotline number is 1-900-773-PING.

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The Association for the Gifted (TAG) division of the Council for Exceptional Children (CEC) awarded the NRC/GT its Certificate of Merit at the association's annual convention in Denver on April 7, 1994. It is the first time the award has been given to an institution. In announcing the award, Karen Rogers, vice president of TAG, said, "The body of useful information about research on, and classroom practices for, students with gifts and talents that the Center has made available to all educators will stand as a hallmark in the field in decades to come."

Recent Research

Exemplary Elementary School Programs in Gifted Education

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Abstract

The Learning Outcomes Study at The University of Virginia was a two-year investigation of academic and affective outcomes of 1,010 elementary school children in four types of programs for high ability learners (Within-class, Pull-out, Separate Class, Special School). The Learning Outcomes Study was extended by adding a qualitative dimension focusing on an exemplary model from each of the four program types. An exemplary model was one for which the program description was complete and internally consistent with the purposes of the program, the program goals and objectives matched the curriculum, and there was satisfaction with the program on the part of students, parents, teachers, and administrators. Characteristics of each program were examined through classroom observations as well as teacher, student, and parent interviews.

What characterizes a program identified as an "exemplary" model of a given type (Pull-out. Within-class, Separate Class. Special School)?

An examination of the five themes (leadership, atmosphere and environment, communication, curriculum and instruction, and attention to student needs), revealed that there are consistencies across all programs leading to recommendations for program development and implementation.

Leadership

In an exemplary model, there is a strong administrative voice to represent and implement the program for gifted learners. This individual oversees the development of long-term goals and objectives and communicates this information to everyone in the school community. These leaders ensure that staff and community members understand and support the program.

Atmosphere and Environment

An accepting atmosphere throughout the school promotes a positive attitude toward the program for the gifted and talented for students, parents, teachers, and administrators. In these programs, students are comfortable with their educational and social environments. Staff members are given the time, materials, and training to address the needs of gifted learners.

Communication

Clear and frequent communication is maintained between parents, teachers, students, and administrators regarding the program. This is accomplished through both general strategies (i.e., newsletters) and individual contacts (i.e., phone calls). These communications include commendations as well as recommendations about program activities and student performance.

Curriculum and Instruction

Teachers are flexible in matching both curriculum and instruction to student needs. They employ a variety of instructional techniques to complement student characteristics, and students feel that they are appropriately challenged. For example, a match is sought between the pacing of the curriculum and the student's ability in a given subject.

Attention to Student Needs

Academic staff and administrators are committed to serving students from traditionally underrepresented populations. They take assertive roles in selecting these students for their programs and inform their staff to be sensitive to the needs of these students once they enter the programs.

What are the influences of such exemplary programs on student achievement and motivation?

Parents, teachers, and students agree that two influences on student achievement and motivation involve providing challenges and choices. Challenges are presented through high-level content and pacing of the curriculum. Techniques such as curriculum compacting are used to present topics at an appropriate, more advanced level. One teacher said, "The grouping itself is a motivator since students can progress at a fast pace and they can work with each other to succeed." Corroborating this remark, a parent noted that her daughter "... likes the fact that she is in a class with other students who are on the same level."

Becoming self-motivated to achieve is easier for some students than for others. To assist with this goal, teachers also provide many opportunities for students to make their own choices and to obtain control over their learning environment.

What distinguishes the exemplary representative model in terms of its ability to serve diverse populations of students?

These "exemplary" models in gifted education address the needs of diverse populations of students in three main ways. First, all selected programs focused on the identification of underrepresented populations of students in their written policies. Specific populations included those from diverse cultural groups, the physically challenged, those with limited English proficiency (LEP), underachievers, and the economically disadvantaged. Second, by focusing on the individual needs of all students, teachers took into consideration specific characteristics related to these diverse populations of students. These characteristics included the use of nonstandard English and limited educational experience. Third, parental and community involvement were seen as vital to the success of the program and to each child's education. To establish these patterns of involvement, district coordinators invite parents to school events, distribute questionnaires about potential family interactions with the school, and keep parents informed about their child's educational program.

Recommendations

This section provides parents and educators with a series of questions they should ask about any program for the gifted and talented if they are to gather information on program practices. Following each set of questions, comments are provided to guide decision-makers in creating or improving their own programs for gifted learners.

What Should Parents and Educators Ask About Their Elementary School Gifted Programs?

Leadership. Who among the school district's administration is an advocate for this program within the school system and the community? Successful programs are characterized by at least one strong voice for the program. Supportive teachers and parents are crucial, but often not as influential as a school administrator in representing the program to other administrators, school personnel, and community members. This individual may be a specially trained coordinator for the gifted and talented, a superintendent or associate superintendent of the school district, a principal or assistant principal or another type of administrator.

How supportive of gifted education is this administrator? He or she should be a strong advocate of gifted education, and able to effectively represent the needs and characteristics of gifted and talented students to the community at large and to key groups of decision makers within the school district.

How long has the program been in existence? What type or types of programs are being implemented in the district (Special School, Separate Classroom, Pull-out program, Within-class program, other)? How long have these programs been operational? If the program type has changed over time, why did this occur? An indicator of an effective program is not necessarily the number of years it has been in existence, but the effort the administration employs to make the program the most appropriate model for meeting the needs of the students. A program that has changed its focus by changing the format and activities offered to students may either be indicative of a staff that wants change for the sake of change or one that is attentive to the needs of its clients. Ask why the change occurred, how the need for change was determined, and how the changes are being monitored. The most effective programs have a comprehensive evaluation design in place. Ask for a copy of the program description including the evaluation plan.

What are the decision-making processes for implementing and revising the program? A program administrator should be able to explain how the decisions are made regarding the program. This includes teacher selection, program development, student identification, curriculum implementation, and program evaluation. Parents and teachers should be involved in planning in order to promote program ownership among staff and community members.

What types of teacher training or staff development are provided in your district? Is this optional or required? Staff development regarding the needs of gifted and talented students should be a requirement for all faculty members. Additional support should be provided to staff working directly with the targeted students.

How are staff members selected to teach in this program? Are there state or local guidelines, certification? Guidelines for teacher preparation at the state or local levels make it easier for districts to select qualified personnel. Teachers should be selected according to their knowledge of the curriculum, their experience in addressing the needs of high ability learners, and their interest in working with exceptional students. The extent of the training considered acceptable to produce qualified personnel varies from completion of a few core courses in the education of gifted and talented learners to

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completing a master's degree in the educational psychology of the gifted and talented. It is recommended that some form of theoretical and practical experience be obtained prior to working with gifted and talented students. Exemplary teachers report that they are involved in on-going educational training through their school staff development programs and through their initiatives.

Atmosphere and environment. What kind of classroom atmosphere do you like to develop? Atmosphere includes the entire school environment. An inviting atmosphere promotes a positive attitude toward the school and the program for parents, teachers, students, and administrators. This is not accidental. Staff members need to be given the time, materials, and instruction to create an integrated school atmosphere. For example, to promote learning as an on-going activity, role models from the community could share their interests and talents with students.

What impressions and concerns do parents, teachers, students, and administrators have about the program? A random selection of these individuals should reveal positive attitudes toward the program. All staff members, students, and parents should be informed about the program and should also feel that they can obtain additional information whenever necessary. The program should not be viewed as a luxury, only receiving support when there is extra money in the budget. This means that teachers of the gifted and talented should have appropriate materials and facilities to implement their curriculum.

Communication. What involvement do staff members have with the program (principal, librarian, school psychologist, fine arts teacher, etc.)? All staff members should be informed about the program and receive training in the characteristics and needs of gifted and talented students. This information should be deemed as important as that concerning the needs of any exceptional child. School personnel should also be involved in program planning whenever their expertise is required. They can serve on student identification committees and contribute to curriculum planning. For example, the librarian can provide valuable information by training the students in advanced reference skills, a lesson on map making can be coordinated with the fine arts teacher, and an advanced science class about the effects of exercise on the body can be taught in conjunction with the school nurse or a local physician.

How do teachers communicate with each other about the program? What type of communication do parents have with the school? Clear and frequent communication between all members of the program must be maintained (parents, teachers, students, administrators). General communication systems (newsletters, progress reports, large group meetings) and individual contacts (phone calls, conferences) should be employed. Communication with parents should include commendations as well as recommendations. This is especially important to parents who often obtain information from the school only when a child has done something wrong.

Curriculum and instruction. What do you see as the needs of the high ability students in your classroom? How do you address these needs? How is that process different from addressing the needs of other students in the class or school? Which particular strategies are used? Gifted and talented students have specific characteristics and needs which require the implementation of educational strategies that are different from those concerning their same-age peers. Teachers working with these students recognize these characteristics and are experienced in providing differentiated curricular activities. For example, an ability to process information more quickly indicates that a child needs less time and fewer repetitions to understand concepts. Indeed, a student so identified may have mastered content prior to its being formally introduced in the classroom. Teachers of the gifted and talented find it necessary to make changes in the content and pacing of the curriculum in order to appropriately challenge students and to make the most effective use of everyone's time.

Which educational model is implemented in your school and classroom? How is this achieved in your school? In your class? How does this model influence your teaching? What do you do differently compared to a classroom that does not use this model? Many programs for the gifted and talented are based on educational systems and models that incorporate content, strategies, and administrative designs developed specifically for high ability learners. These models should provide programs that are different from the regular curriculum. The differences should not be seen as special privileges for the gifted and talented, but as appropriate educational decisions.

What influence does this program have on student achievement, motivation, self-concept, and creativity? Programs should focus on both cognitive and affective outcomes for students. Achievement, motivation, self-concept, and creativity are some of the key areas included in goals, objectives, and the evaluation plan.

What type of evaluation procedures are used in the program? All programs should have explicit procedures for evaluating student progress and the effects of the program. The evaluation design should be directly related to the goals and objectives of the program.

What do you think it takes to be an effective teacher in this program? Teachers say that the most important teaching quality is flexibility. This means that they are aware of the many ways their students think and approach challenges in the classroom. Flexibility also means that teachers need to plan curricular activities that fully challenge the abilities of their students and are integrated in the short-term and long-range educational plans of the school district. For instance, specific learning outcomes determined by the state and local school boards may be achieved at a faster pace, thereby creating the need for alternative curricular approaches such as acceleration and enrichment. Highly creative students require a variety of outlets for their talents (e.g., art, music, dance, humor) and time for thinking.

Attention to student needs. How do you address the needs of students from culturally diverse and economically disadvantaged backgrounds? These particular groups have been noticeably absent from many programs for the gifted and talented. In order to remedy this situation, identification procedures and program activities must focus on the unique characteristics of individuals from diverse cultural groups. Whether a school district has one dominant racial/ethnic group such as African-American or Hispanic students or a number of subgroups represented in its population, the program for the gifted and talented should have a plan to actively recruit these students and to provide activities to address their needs.

How are individual expression and creativity viewed? How do students express their interests? What is the focus of the program with respect to a student's affective needs? How are students challenged within the program? How is this ascertained? What is the philosophy concerning student learning styles? Teachers should incorporate student interests into each subject. Students should be encouraged to express their ideas and to expand their thinking. Since students reported that they were most comfortable when their educational *and* social environments were positive, they should be given opportunities to feel challenged by academic rigor and to develop friendships with peers who share similar interests.

By referring to these themes and related questions, one will gather a significant amount of information about any program for the gifted and talented.

Peer Nomination Form Shows Promise With Minority Students

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The research staff at the University of Virginia has just completed an investigation of the reliability and validity of a peer nomination form developed by Dr. Anne Udall. Dr. Carolyn Callahan and research staff, Caroline Cunningham, Chris Roberson, and Ari Rapkin, selected the peer nomination form for investigation based on the commitment of The National Research Center to search out and investigate the soundness of alternative assessment tools to identify gifted and talented students.

In searching for solutions to the problem of minority underrepresentation in programs for the gifted, researchers have begun to turn their attention to identification strategies which extend beyond the traditional focus upon standardized measures. Frasier (1991) stresses the need to look beyond "paper" information, such as that found in standardized tests, to "people" information, such as that found in nominations. Such nominations can come from a variety of sources—teachers, parents, peers, and persons in the students' communities (Frasier 1989, 1992). Acting on the assumptions (a) that peer nominations may be less biased toward cultural differences than other forms of identification (Adams, 1990), (b) that they may allow for the recognition of otherwise untapped information concerning gifted minority students (Rhodes, 1992), and (c) that they could be a valuable means for identifying creativity in gifted students (Hadaway & Marek-Schroer, 1992), the NRC/GT selected an instrument that had preliminary evidence of face validity and content validity.

Despite the increased support and use of peer nomination, Gagné, Begin, and Talbot (1993) report that most of the peer nomination instruments currently being used "lack the barest information on their reliability and validity as screening instruments" (p. 39). Accepting the challenge to rectify this problem, we have examined the reliability and validity of Udall's peer nomination instrument. First, the instrument was revised based on Udall's earlier study of the instrument. The final

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form of the instrument we investigated consists of 10 questions which address the following specific categories of gifted behaviors: speed of learning, task commitment/motivation, general intelligence, and creativity in the areas of play, music, art, and language. Examples of these questions are: "What boy OR girl learns quickly but doesn't speak up in class very often?" and "What girl OR boy is really good at making up dances?" Students are asked to evaluate their classmates' behaviors and then name those most fitting the listed categories.

The sample size for this study consisted of 555 fourth, fifth, and sixth grade students from 3 Collaborative School Districts—Tucson Unified School District and Amphitheater Schools in Tucson, AZ and Donna Independent School District in Donna, Texas—which have large Hispanic populations (>90%). Each participating teacher provided a list of the students who participated in the study and demographic information on each student—name, grade, gender, ethnicity, and whether or not the student had been identified as gifted by the school district. To measure the consistency of this instrument, we administered the peer nomination form twice using a time interval of 6 weeks between the 2 administrations. To ensure that the items on the instrument measure categories of gifted behaviors which we want them to measure, we established the relationships between individual items and clusters of items which addressed similar behaviors.

We found the overall consistency of the peer nomination instrument to be high as demonstrated by the test-retest reliability correlation obtained by administering the instrument twice. Individual items addressing specific areas of giftedness, such as art and music, also had high degrees of consistency. In addition, those questions or clusters of questions addressing the same categories of gifted behaviors related more closely with each other than with questions or clusters addressing different categories of gifted behaviors. This pattern serves as initial evidence of the instrument's construct validity, or its ability to measure what it is supposed to measure.

In both rounds of testing, females were nominated significantly more times than males on questions addressing general intellectual ability and dance ability. Males were nominated significantly more times than females in the area of drawing ability in both rounds and in the area of making up games in Round 1. These differences suggest that the scores on these particular questions be assessed differently for males and females. For example, in assessing general intellectual ability using this instrument, schools should closely examine nominations in their setting and adjust interpretation of nominations accordingly.

While ANOVA results showed differences by race for African-Americans and Asian-Americans in the second round, these results may be spurious due to the extremely small sample size of African-Americans and Asian-Americans included in the study. Further study using these populations is necessary before any conclusions can be drawn about the use of this instrument with African-American or Asian-American students. It is important to note that no significant differences were found between the nominations of Hispanics and Caucasians. Thus, this instrument reflected cultural neutrality toward Hispanics, the target population for this study. In addition, we found no significant differences across the grade levels.

While we suggest further study of this instrument using samples which reflect cultures other than Hispanic, our analyses of the reliability and validity of this instrument, as well as of the gender and race issues, suggest promise.

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NRC/GT welcomes these new Collaborative School Districts

Summit School
Elgin, IL

Fox Chapel Area School District
Pittsburgh, PA

Lancaster County School District
Lancaster, SC

Clover Park School District
Tacoma, WA

Identification and Evaluation Databases: Up and Running

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Numerous schools and school systems do not have easy access to information regarding current identification and evaluation issues, practices, and instruments used in the education of gifted students. The National Repository of The National Research Center on the Gifted and Talented was established as a resource to provide empirical data to assist school administrators, teachers, and coordinators in making informed decisions about their identification and evaluation procedures.

Recent Research

In the past year, we have received over 70 requests for specific database searches. This demand indicates a strong interest in our databases. Nearly all of the identification and evaluation databases at the University of Virginia site are now established and organized to meet the demand of requestors. The identification databases include reviews of identification instruments, references to articles on the use of specific identification instruments and tests, references to articles about special identification issues and concerns, references to local identification instruments and processes, and a bibliography of published and standardized identification tests. Current evaluation databases include references to local evaluation instruments and processes.

A listing of standardized identification measures includes names and addresses of instruments. All this information may be located in a computer database according to a specified construct, such as general intellectual ability, verbal ability, task commitment, creativity, or acting ability; a school level (ranging from prekindergarten to high school); or a population such as learning disabled, Hispanic, African-American, or low SES. Requests most frequently center on the constructs of general intellectual ability, verbal ability, mathematical ability, creativity-ideation, creative problem-solving, inter/intra-personal ability, psychomotor ability, and mathematical achievement.

Requests have also been made for specific instruments, such as the *Torrance Tests of Creative Thinking*, *Raven's Progressive Matrices*, the *Cognitive Abilities Test*, and *Screening Assessment for Gifted Elementary Students*.

Evaluation databases continue to be revised. The two complete databases contain information about published and standardized instruments used in the evaluation of gifted students and/or gifted programs and articles about using information from evaluations. Four remaining databases are currently being revised and upgraded. A database of evaluation design articles includes summaries of models and assumptions underlying these design models and describes the use of design. The evaluation utilization database includes abstracts of articles on assessment issues, guidelines for effective evaluation, and considerations of factors affecting evaluation. Studies of program evaluation, evaluation utilization, and data collection, and articles presenting methods of effective evaluation comprise the evaluation bibliography database. Finally, a list of standardized instruments used in program evaluation is available.

Schools from across the U.S. have contributed their local identification and evaluation instruments to share with other schools that may be interested in examining alternative identification and evaluation methods. People requesting this information will receive copies of actual forms and addresses of the schools that use these forms so they can contact the schools if they want to implement similar procedures or to seek further information.

People who are interested in using the NRC/GT's Repository of Identification and Evaluation Instruments can request an order form by calling the NRC/GT at University of Virginia at (804) 982-2849 or writing to the NRC/GT, Database Requests, Curry School of Education, 405 Emmet Street, University of Virginia, Charlottesville, VA 22903. Order forms will be sent and then the requestor can review and check off the desired database and specific components such as school level, construct, or evaluation question.

Recent Research

Locally Available Opportunities for Rural and Suburban Gifted Students

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It seems obvious that gifted students living in large cities, moderate-sized towns, and rural or small towns would tend to have different experiences, but rural students have not generally been recognized as a distinct subpopulation of gifted students until very recently. Although rural gifted students have been noted only occasionally in gifted education literature over the past twenty years (Caudill, 1977; Plowman, 1977; Spicker, Southern, & Davis, 1987), this population is now receiving considerable attention. Recent literature has addressed specific strategies for meeting the needs of this population (Benbow, Argo, & Glass, 1992; Guzik, 1994; Spicker, 1993), provided empirical research about the rural gifted (Cross & Stewart, 1993; Jones & Southern, 1992), and reported experiences of specific rural gifted children (Kantrowitz & Rosenberg, 1994; Whittemore, 1991). Two federally funded programs are currently providing services to some rural gifted students as well as providing much-needed data about this population (Spicker, 1993; Spicker, Fletcher, Montgomery, & Breard, 1993; Swanson, Elam, & Peterson, 1993).

Plowman (1977) stated that rural gifted students may be "unsophisticated - uninformed, lacking in social and learning skills, and deprived culturally and educationally" (p. 73). This implies that enriching experiences, whether provided by the school or available through the community, may be very important for rural gifted students. Jones and Southern (1992) reported that many existing programs for rural gifted children consist of "sporadic extracurricular programs," and enriching cultural and educational activities have been provided as one aspect of a recent innovative program for rural gifted students (Spicker, 1993). Participation in extracurricular activities has been found to correlate with academic achievement (Laubscher, 1988). It has been reported that participation specifically in high school athletics increases educational aspirations (Cutright, 1987; Holland & Andre, 1987). Participation in athletics may be of special value to rural students, since they have lower educational aspirations than other U.S. students (Cobb, McIntire, & Pratt, 1989; Haas, 1992).

In light of existing literature, it seems that the availability of enriching extracurricular activities may be very important to the rural gifted. Caudill (1977) wrote, "The major problem that one faces when programming for gifted education in rural areas is the lack of enriching experiences and cultural opportunities for the students" (p. 91). Shore, Cornell, Robinson, and Ward (1991) concluded in their review of research that this and other assumptions about rural gifted students "would benefit from investigation" (p. 255).

In order to test the assumption that rural gifted students have fewer educational and cultural opportunities and experiences, investigators from the University of Virginia have gathered data from a survey of rural and suburban students from collaborative school districts of The National Research Center on the Gifted and Talented. In this study, rural students were defined as those attending schools in towns outside of U.S. Metropolitan Statistical Areas (MSAs), New England County Metropolitan Areas (NECMAs), and having fewer than 10,000 inhabitants. Suburban students were defined as those attending schools in towns outside MSAs and NECMAs with more than 10,000 inhabitants. Research in education uses inconsistent definitions of rural and suburban communities, but these criteria were deemed "reasonable" (W. G. McIntire, personal communication, Spring, 1992). A total of 235 gifted seventh and eighth grade students, representing 8 states (AK, CT, GA, HI, IL, MI, MT, & NE), were surveyed. Any students who were identified by their local schools as gifted were considered gifted for the purposes of this study.

Students were asked to report how many times they had personally attended each of the following cultural events during the year prior to the survey:

plays, musical performances, dance recitals, athletic events, art exhibits, and museums. Students were also asked to report how many of each of the following experiences were available to them as a participant in the 2 weeks prior to the survey (either in school or out of school): sports, vocal music, instrumental music, drama, visual arts, dance, interest clubs, service clubs, academic clubs, publications, student government, school-sponsored trips, and church activities.

Results

With gender and grade level controlled for by the use of multiple regression, several significant differences ($p < .01$) were identified. Rural students had attended more musical events and athletic events in the year prior to the survey than suburban students. Rural students also reported having attended a greater total number of cultural events in the prior year than their suburban counterparts. Suburban students did not report attending greater numbers of any of these types of events in the prior year than did rural students.

However, in comparing the number of activities available to the students as participants during the prior 2 weeks, suburban gifted students reported significantly more opportunities in the following areas: instrumental music, drama, dance, and school-sponsored trips. Rural gifted students reported more opportunities to participate in sports activities than did suburban students.

Discussion

This survey yields mixed results with respect to the question of whether or not rural gifted students have fewer educational and cultural opportunities and experiences than their counterparts from larger towns. Rural gifted students attended a greater number of cultural events in the last year than their suburban gender and grade peers, and specifically attended more athletic and musical events. Suburban gifted students had greater numbers of available activities to choose from involving instrumental music, drama, dance, and school-sponsored trips, while rural gifted students had more opportunities only in the area of sports.

It appears that rural gifted students have access to a narrower spectrum of local opportunities than their suburban counterparts and are particularly limited in the cultural areas of drama, dance, and instrumental music. In spite of their limited access to experiences, rural gifted students attended more cultural events than their suburban peers. This finding is consistent with the report by Schmuck and Schmuck (1992) that most teenagers in small rural schools "felt involved in extracurricular activities" (p. 19). Rural gifted students, though they may be disadvantaged by the breadth of opportunities, take advantage of them more than their suburban peers. It does not appear, based on this study, that rural students in grades 7 or 8 have fewer cultural experiences than suburban gifted students. If the rural gifted are, in fact, "unsophisticated uninformed, lacking in social and learning skills, and deprived culturally and educationally" (Plowman, 1977, p. 73), it does not seem that lack of locally available opportunities is the source of these traits.

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Changing the Way We Perceive "Creativity"

Jonathan A. Plucker
The University of Virginia
Charlottesville, VA

Flatow, I. (1992). *They all laughed...From light bulbs to lasers: The fascinating stories behind the great inventions that have changed our lives*. New York: Harper Perennial.

Gardner, H. (1993). *Creating minds: An anatomy of creativity seen through the eyes of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi*. New York: Basic Books.

Weisberg, R. W. (1993). *Creativity: Beyond the myth of genius*. New York: W. H. Freeman.

If the two decades immediately following Guilford's (1950) famous APA address were the "Golden Age" of creativity, there is ample evidence that we are undergoing the "Modern Age" in the study of creativity. Theories are increasingly interdisciplinary and involve system perspectives, centers for creativity research and leadership are becoming firmly established and internationally-renowned, and individuals from a variety of backgrounds express a willingness to tackle some of creativity's tougher problems (e.g., identification, assessment, acceptance-gaining, relationship to other cognitive processes). The study of creativity is entering its renaissance, and, as a result, there has been a flurry of publishing activity with respect to materials on creativity.

Three of the most recent creativity books to cross my desk are also three of the most thought provoking: Ira Flatow's *They All Laughed...*, Howard Gardner's *Creating Minds*, and Robert Weisberg's *Creativity: Beyond the Myth of Genius*.

When reading these books, the following questions may serve as guides:

- *Who is the author's target audience - educators, theoreticians, researchers?*
- *What is the author's stated purpose for writing the book?*
- *How does the book attempt to change the way we view "Creativity"?*
- *Regardless of the intended audience, how can the author's ideas be translated into classroom practice?*
- *How valuable are examinations of the lives and/or works of creative, historical figures?*

Of these three books, Howard Gardner's *Creating Minds* will have the most substantial impact upon the study of creativity. Using a methodological framework that has emerged over the past few years (Gardner, 1988; Gardner & Nemirovsky, 1991), Gardner analyzes seven of the "great creators," all of whom were contemporaries: Sigmund Freud, Albert Einstein, Pablo Picasso, Igor Stravinsky, T. S. Eliot, Martha Graham, and Mahatma Gandhi. *Creating Minds*' most significant contribution is the method that Gardner uses to analyze all aspects of the lives of these seven individuals. He stresses several overarching, organizing themes to guide his investigations, which he approaches from developmental and social/environmental interaction perspectives.

Some of Gardner's most interesting findings include the high degree of self-promotion that each individual used to gain attention for his or her creative works, the observation that "important events and breakthroughs" occurred roughly 10 years apart, and the fact that many of the creators grew up in households where affection and intimacy, if present at all, were based upon achievement. While I disagree with some of Gardner's positions, including the potential importance of a biological basis for creativity, these are minor issues when compared to the book's considerable contributions to the study of creativity.

Flatow's *They All Laughed...* is a collection of stories about some of humankind's major inventions (e.g., the lightbulb, television, lasers, submarines, nylon). Each section is written in a very readable, almost anecdotal style, but a great deal of pertinent detail is included. Many widely held misconceptions are debunked, including the notion that Thomas Edison tried carbon as a lamp filament in the lightbulb serendipitously (incidentally, no fewer than 13 inventors had tried carbon filaments in their lightbulbs over the previous 34 years).

I found Flatow's accounts of the "behind-the-scenes" maneuvering and politics that influenced the acceptance of these inventions to be especially interesting. For example, Edison, who had invested a great deal of time and money into the use of direct current (DC) electricity, was worried when George Westinghouse's company, which sold alternating current (AC) electricity, became profitable. The ensuing dispute included the world's first execution through the use of the electric chair. Edison, claiming that AC was far more dangerous than his own DC, convinced the State of New York that electrocution using AC electricity (and a Westinghouse generator) would be humane. Of course, Edison hoped that AC would become synonymous with lethality, but by the time the gruesome spectacle was reported in the newspapers, Westinghouse had an unbreakable monopoly in the electricity industry.

In *Creativity: Beyond the Myth of Genius*, Weisberg seeks to "discuss the components of ordinary thinking and how they underlie even the greatest examples of creativity" (1993, p. xiii). Previously, Weisberg (1986) criticized the widely held belief that creativity is the result of "extraordinary thinking," or what he refers to as the "genius" approach to the study of creativity.

In his effort to stress the underlying role of ordinary thinking to the creative process, Weisberg uses the first two chapters to familiarize the reader with the genius-ordinary thinking debate and to stringently critique the genius position, especially the role of intuition, insight, and the unconscious in the creative process. The concept of the creative personality is analyzed with the conclusion that the role of the personality has been oversimplified and overemphasized. An impressive amount of evidence supporting the "ordinary thinking" position is also presented. Weisberg often uses historical case studies to illustrate his points, and he is most successful when he analyzes the inventive or scientific experiences of "genius" creators in order to illustrate the preponderance of "ordinary thinking" in even the most renowned examples of creative accomplishment.

Many of Weisberg's comments will surprise the reader (e.g., brainstorming is highly overrated as a creative thinking technique), and many more will provoke a great deal of debate. This is Weisberg's most significant contribution: by questioning some of the long-held beliefs and themes of the study of creativity, a long overdue debate may have finally come to the forefront.

From the perspective of a classroom teacher, Flatow's book is clearly the most useful. Students will find the stories to be quite entertaining, and educators can use it to enrich content across a variety of disciplines, including the physical sciences, engineering, business, and thinking skills. Teachers will also find Weisberg's work to be thought provoking as it causes them to question their beliefs about creativity.

Creativity researchers will find the Gardner and Weisberg books to be interesting and useful. Gardner introduces a method for investigating creative lives and effectively shows how it can be used, and Weisberg questions many of the underlying assumptions of creativity research, theory, and education. And both authors include enough "bombshells" to spark debate for many years to come.

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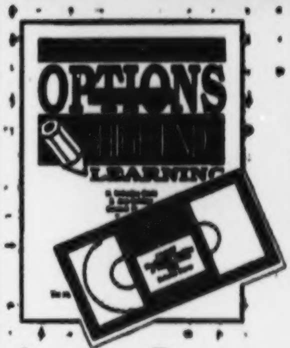

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NRC/GT Destination: Around the Corner

E. Jean Gubbins
The University of Connecticut
Storrs, CT

It seems like a few months ago, rather than years ago, that I penned an article for the *NRC/GT Newsletter* entitled "NRC/GT Destination: So Near and So Far." We have accomplished so much since the fall of 1992 that it always amazes us. The level of productivity and the ability to get the word out about the emerging research results have been remarkable feats. We could only accomplish this by the cooperation of many of you in our network. There have been so many times when we have provided you with documents that you have reproduced through your local newsletters or journals. We truly appreciate your involvement in the NRC/GT dissemination plan.

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Inside

New Studies..........
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Samantha's Story........
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I rifle through my files and note an article by Joe Renzulli for *Gifted Child Quarterly* (Spring 1991). In the article entitled "The National Research Center on the Gifted and Talented: The Dream, the Design, and the Destination," Joe captured the essence of what the Research Center could become over five years. We have been fulfilling the dream designed several years ago and this fulfillment has been possible because of the quality of the research studies implemented across the four universities, as well as through the help of our Consultant Bank Members. Our Consultant Bank Members have prepared commissioned papers and

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The National Research Center on the Gifted and Talented
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(continued from page 1)

conducted Collaborative Research Studies. In the *Gifted Child Quarterly* article, Renzulli stated:

> A major conviction underlying NRC/GT is that research in an applied field must be grounded in the realities of schools and classrooms and must be accessible and meaningful to those people who work and study in them. A guiding principle for the Center; therefore, is that all research and dissemination activities must have derived benefits for practitioners and must result in some kind of direct impact upon educational policy, management, or practice. At the same time we recognize the essential need for research to be theory based and empirically sound. (p. 73)

We have focused on this conviction, and we will continue to do so as we complete our final year of the Center. Our final year should prove to be as productive as earlier years. We have embarked on a new series of studies that will look at various research questions using qualitative and quantitative methodologies. We hope to gather information on learning, teaching, staff development techniques, and achievement and underachievement issues. Abstracts of the four new studies that are being implemented in Year 5 of the NRC/GT are summarized in this newsletter.

While we are engaged in the new studies, we continue to implement and finalize other projects. Everything that has reached its completion is shared with you. Several projects have been disseminated recently. I'd like to highlight some of the more recent products to draw your attention to some practical information that may be of interest to you in your present educational position.

Linda Jensen Sheffield, in her monograph entitled *The Development of Gifted and Talented Mathematics Students and the National Council of Teachers of Mathematics Standards,* has concluded the following:

> Teachers should encourage students to construct their own mathematical understanding and talented students should be encouraged to reach the highest levels of construction.

We also like to take the findings of various projects and apply them to everyday activities and situations in the classroom. One of our most popular approaches to translating theory into practice has been the series of practitioners' guides developed by Del Siegle, Editor. There are a few new ones that are available and more are in production. Some of the more popular ones at this point in time are:

- What Parents Need to Know About Early Readers
- What Educators Need to Know About Gifted Students and Cooperative Learning
- What Educators Need to Know About Mentoring

All of you on our newsletter list will, of course, be receiving these practitioners' guides and you may choose to reproduce them for interested parties. Some highlights of the practitioners' guides are:

> ***What Parents Need to Know About Early Readers—*** Precocious readers almost always remain at least average in their reading ability and most stay well above average as they progress through school. For later reading development, the most important aspect of language acquisition is a wide ranging knowledge of the world and the ability to express that knowledge through language.
>
> ***What Educators Need to Know About Gifted Students and Cooperative Learning—*** Having gifted students in a cooperative group neither helps nor hinders other group members' academic performance. A variety of cooperative learning models have been developed and some are more appropriate for gifted students than others.
>
> ***What Educators Need to Know About Mentoring—*** The benefits of a mentor relationship for a student are both personal and academic. The relationship encourages students to pursue their interests at advanced levels. In a 22-year study of 212 adults, E. Paul Torrance found that those who worked with mentors completed a larger number of years of education and earned more adult creative achievements than persons who did not have mentors.

Having concise formats, such as the practitioners' guides, allows people in our network to get the word out to others who may raise questions about various topics and would like a brief overview of the topic that is supported by research facts. The guides have been very popular handouts at conferences and meetings.

We have used a variety of media to deliver the messages from research and continue to explore other alternatives. Whether you prefer words, numbers, visual images, or sound bites, you can access our findings. If verbal presentations are your preferred style of learning, you will have another opportunity to become involved in learning about the findings of the NRC/GT. We will organize a conference highlighting all of our work from March 31 to April 1, 1995. We are currently in the process of finalizing plans for the exact location, but we know it will be held in Connecticut. The conference entitled "Building a Bridge Between Research and Classroom Practices in Gifted Education" will feature findings from the research studies, as well as invited presentations from those who have been involved with our Research-Based Decision Making Series, Collaborative Research Series, or those who are members of our Consultant Bank.

We hope that you will consider attending the NRC/GT conference, and we are sure that it will be well received. We look forward to distilling our work to such an extent that common themes will emerge across all of our studies that can be translated to practical applications to improve the educational environment for all children. This conference will be an additional way to meet the guiding principle that was set in the article "The Dream, The Design and the Destination," which stated that all of our work should have derived benefits for practitioners and must result in some kind of educational policy, management, or practice. That is our goal and we continue to hit the mark because of an incredible network of researchers and practitioners.

Reference:

Renzulli, J. S. (1991). The National Research Center on the Gifted and Talented: The dream, the design, and the destination. *Gifted Child Quarterly, 35*(2), 73-80.

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Additional conference information will be sent early in January

Year 5

Extending the Pedagogy of Gifted Education to All Students

Principal Investigator:
Sally M. Reis

For the last four years, many of our research efforts at the NRC/GT have concentrated on the use of various techniques with gifted and talented students across the country. In the course of this research, questions have arisen about whether these types of techniques and strategies can be used with a broader range of students than those normally identified for participation in gifted programs. This study addresses these questions and the challenges presented in the recently released report by the United States Department of Education, Office of Educational Research and Improvement, entitled *National Excellence: A Case for Developing America's Talent.* Consistent with the priorities of the Jacob Javits Act, this study is designed to assess the impact of providing gifted education pedagogy, specifically, a series of enrichment clusters, to the entire population of two schools in economically disadvantaged urban settings with a high percentage of minority students. Enrichment clusters provide a regularly scheduled time for students and adults who share a common interest and purpose to come together. They are based on the acquisition of advanced content through an inductive approach to the pursuit of real-world problems and provide opportunities for multi-age, cross-grade student participation in open-ended investigations of student interest. Central office administrators in two districts have already agreed to participate in the study. One school from each district will serve as the treatment in which enrichment clusters will be implemented and one school will serve as the control site for comparative purposes. Students in each treatment school will attend two series of enrichment clusters. All students in all four schools will be assessed on their attitudes toward school and learning, and on a number of other teacher and student outcomes. Data will also be collected from parents and teachers related to school satisfaction, use of enrichment strategies, and other related variables. Qualitative data will also be collected on the attitudes of teachers, students, and parents about the implementation of enrichment clusters.

New NRC/GT Studies for Year Five

- Implementing Enrichment Clusters
- Underachievement Among Black Youth
- Instructional Practices in Middle Schools
- Achievement Among American Indian Students

RESEARCH IN PROGRESS

Correlates of Underachievement Among Gifted and Nongifted Black Youth

Principal Investigator:
Donna Ford-Harris

Underachieving gifted and nongifted Black students (n=200) in grades 7 through 9 will be surveyed regarding their perceptions of factors that negatively or positively affect their achievement. Issues related to self-concept (academic, social, physical appearance, and global), racial/ethnic identity, and test anxiety will be examined, as well as the influence of other social and cultural factors affecting underachievement.

The Relationship Between Policy, Beliefs, and Instructional Practice in Middle Schools:

How Do Schools Implement the Philosophy and Recommendations of the Leaders in Middle School Education

Principal Investigators:
Carol Tomlinson
Carolyn Callahan
Ellen Tomchin

The primary objective of this study is to probe the ways in which the current middle school literature on meeting the needs of diverse learners, including the talented, is reflected in the policies, beliefs, and practices of administrators and teachers in those settings. In addition, the literature and the policies, beliefs, and practices will be compared to the research findings of cognitive and developmental psychologists, educators, and sociologists regarding the learning and development of students in the transition years.

The Paradox of Academic Achievement in High Ability, American Indian High School Students

Principal Investigator:
Jann Lepplen

Gifted students from culturally diverse populations exist in high schools across the country, yet many do not achieve at a level commensurate with their abilities. It has been suggested that underachievement may be one reason that many young people are excluded from educational programs for high ability students. Despite a call to researchers to investigate the "untapped resources" in children from racial and ethnic minority groups, a paucity of research exists about high ability, American Indians living on or near reservations, and the factors identified by these students that influence their patterns of achievement or underachievement.

This ethnographic study will identify the patterns of achievement and underachievement experienced by high ability, American Indian, high school students. By examining differences between those who achieve and those who underachieve, factors which mediate the achievement of these students will be identified, through participant observation, ethnographic interviews, and document review. Descriptions of how the school experience is perceived by two samples of American Indian high school students, those who achieve, as well as those who underachieve will emerge, as will the factors which influence their beliefs regarding this phenomenon.

Watching TV Gifted: A Care-Giver's Guide

Bob Abelman, Ph.D. – Cleveland State University

Despite tabloid headlines to the contrary, television has no effect on children. "Effect" implies that television does something to someone. Nothing could be further from the truth. Children take from television. What they take, the manner by which they take, and what they do with that information once taken is up to the child. By the very nature of being extremely bright and precocious, intellectually gifted kids are particularly vulnerable to some media messages, well protected and insulated from others, and capable of learning more from yet other forms of television than other children.

Reading WATCHING TV GIFTED will give parents and teachers a greater awareness of their children's televiewing and offer a prescription for how to neutralize or avoid the more negative outcomes and maximize or accentuate the more positive ones. This book is based on the belief that television viewing need not be a dysfunctional or mindless activity for gifted kids; it can and should be enriching, mind-expanding, instructional, and fun . . . if used correctly.

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Examining a Tool for Assessing Multiple Intelligences

Cheryll M. Adams
Ball State University
Muncie, IN

Carolyn M. Callahan
The University of Virginia
Charlottesville, VA

While many educators have emphasized the need to identify giftedness in young children, there is seldom a concerted effort to identify primary level children for gifted programs (Clark, 1988; Kitano, 1989; Rubenzer, 1979; Shaklee, 1992; Whitmore, 1986, 1988). One often-cited reason for not acting to identify young children is the inadequacy of identification procedures to evaluate and assess giftedness currently in use in most school systems. The National Association of the Education of Young Children (NAEYC, 1988) has adopted a position statement on Developmentally Appropriate Practices in Early Childhood Programs Serving Children from Birth through Age 8, which expresses concern about the use of standardized testing for placing young children in special programs and the practice of making decisions based on a single score or measure. The position of the NAEYC is based on agreements that instruments used for such selection are not reliable and valid when used with very young children. Further, teachers are often unable to recognize signs of giftedness in young children and continue to select only students who are high achievers in the classroom (Roedell, 1985; Whitmore, 1982).

Another problem facing educators that cuts across identification of gifted students of all ages stems from the failure of traditional assessment instruments to identify gifted students from the population of economically disadvantaged, limited English proficient, and minority children. Educators have been making recommendations for change to address these issues for two decades and agree that direct observations are useful in identification of disadvantaged and culturally diverse learners. Yet, little has been done to validate new forms of assessment. Clearly, there is a need to identify other reliable and valid methods to assess giftedness in young children, particularly those who are culturally different or economically disadvantaged.

Howard Gardner (1983) expands the definition and assessment of intelligence to include seven separate intellectual domains: linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal. The major thrust of Gardner's theory is that individuals tend to have strengths in specific cognitive functions. According to his theory, individuals are capable of exceptional development in any one or a combination of these seven discrete intelligences. Gardner (1989) further cautions that "intelligences must always be conceptualized and assessed

RECENT RESEARCH

in terms of their cultural manifestation in specific domains of endeavor" (p. 6). For example, to assess spatial skills a child might be given a small kitchen appliance or tool from his or her environment to take apart and put back together. One NRC/GT Collaborative School District in Maryland, the Montgomery County Schools, was awarded a Javits grant to pilot an application of Gardner's theory. The project staff of The Early Childhood Gifted Model Program has developed a *Checklist for Identifying Learning Strengths* based on the theory of multiple intelligences, a means of searching for the talents of culturally diverse, economically disadvantaged gifted students. Classroom teachers have been trained to use particular tasks to elicit behaviors relating to the specific intelligences and to use the checklist to identify gifted young children for the program. The checklist consists of seven sections, each corresponding to one of the seven intelligences identified by Gardner. Each section is comprised of seven to eleven statements describing ways that intelligence may be manifested in the child. For example, under the verbal-linguistic heading are statements such as, "Enjoys word play;" "Expresses ideas easily, either orally or in writing;" and "Is a good storyteller or writer." Students high in visual-spatial ability may exhibit characteristics such as, "Chooses to express ideas through visual media;" "Takes things apart and puts them back together again;" or "Can organize and group objects." The observer gives each domain an overall rating of one ("You have not observed these behaviors") to four ("You almost always or always observed them"). A five indicates "No opportunity to observe these behaviors" (during data analysis, these scores were dropped). The observer may also check any of the descriptors that may be particularly strong indicators for the child. An overall rating is obtained for each intelligence. There is also a section for the observer to add comments that might help another teacher plan for the child.

The NRC/GT staff has been collaborating with the staff of the Early Childhood Gifted Model Program in establishing the psychometric properties of the checklist. First, a reliability study was undertaken to establish intrarater reliability and stability for the checklist. In Round One all 365 students in kindergarten through second grade in the schools participating in a pilot study were rated by teachers who had received training in the use of the scales. One month later the names of 10 students were randomly selected from each classroom. These students were rated again by the rater who had observed them previously. One hundred thirty-six students were included in this process.

When the same teacher rated the same child after a one-month interval, the intrarater reliability for kindergarten students were moderately high (ranging from .713 on the logical-mathematical scale to .782 on the spatial scale). Correlations across the two ratings for first grade scores ranged from .496 (music) to .775 (interpersonal). At the second grade level, intrarater reliability ranged from .681 (bodily-kinesthetic) to .811 (linguistic).

These intrarater reliabilities are not high enough to warrant placement decisions about individual children on the basis of the checklist scores alone, but they are reasonable for considering modification of instruction in conjunction with other data a teacher has about the child's achievement. The reliabilities are also sufficiently high to warrant further investigation. We, therefore, looked to see if the seven domains were independent. As expected, and as preliminary evidence of construct validity, scores across domains were not highly correlated with each other. Each domain appeared to be measuring attributes that were unique.

Currently, we are analyzing additional data to establish inter-rater reliability as well as the relationship between this instrument and other measures of intelligence.

The results of the study support Gardner's assertion that the domains appear to be discrete. At this time, teachers in the project are using the results to focus activities for the children by differentiating the curriculum according to an individual child's identified strengths.

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For further information about the checklist contact: Dr. Waveline Starnes, Montgomery County Public Schools, 850 Hungerford Dr., Rockville, MD 20850

Guiding the Development of Mathematically Talented Students

A review of *Windows of Opportunity: Mathematics for Students With Special Needs*

M. Katherine Gavin
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A Review of
Windows of Opportunity: Mathematics for Students With Special Needs
C.A. Thornton & N.S. Bley (Eds.)
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COMMENTARY

In *Windows of Opportunity: Mathematics for Students with Special Needs,* the National Council of Teachers of Mathematics (NCTM) has furnished a professional resource for both regular classroom teachers and teachers of students with special needs, including students who are gifted and talented in mathematics. The educators who collaborated in writing the chapters impart the philosophy of the NCTM Standards (National Council of Teachers of Mathematics, 1989) and share practical, effective instructional strategies for implementation. A particular focus that binds the chapters together is a nurturing of mathematical thinking through relevant, problem-centered instruction. This focus is important to note since teachers, in interpreting the Standards, often zero in on the need for students to "do" mathematics, but are less aware of the Standards' emphasis on the mathematical reflection required for true discovery and understanding. All the authors in the text agree that a classroom environment based on the Standards is one that creates opportunities to discover mathematically talented students. They recognize the importance of a constructivist approach to mathematical investigations and offer many practical examples with extensions focusing on differentiation. The text is divided into three major sections: current issues relating to equitable programs for students with special needs, major curriculum thrusts in mathematics, and promising practices of several existing programs that include, or are designed for, students with special needs.

Focusing specifically on the attention and information given to students who are mathematically talented, let us begin by looking at the chapter "Issues of Identification" by Downs, Matthew, and McKinney. Writing for the regular classroom teacher, these authors present a concise and accurate overview of the major issues in the definition and identification of talented students. Concerns centering around the disparity in defining giftedness by leading theorists in the field and varying interpretations of the federal definition at the state and local levels are discussed. The practical tips offered to teachers to help them recognize talent in their students, especially students who do not fit the stereotype, including economically disadvantaged and underachieving gifted students, are a breath of fresh air. The authors caution against the sole use of standardized tests in identification, stressing the cultural and gender bias that may be inherent in these tests. Although they list other good alternatives for identification, I found peer, self, and parent nominations unfortunate omissions. Overall, this section is well done and, in summary, the authors offer some excellent advice: "Schools should be oriented toward collecting and analyzing data that will be used for instructional planning as opposed to simply collecting data to justify a label" (p. 69).

Drawing courtesy of the Iowa Department of Education

Another chapter on planning for instruction introduces the idea of developing a Mathematics Individualized Learning Plan (MILP) for all talented math students. Similar to an Individualized Education Plan (IEP) for special education students, this plan would be a year-long program with individualized goals, objectives, instructional materials, and assessment techniques designed by a team including the classroom teacher, the math specialist, the enrichment specialist, and the parent. A detailed MILP for a second-grade girl is included in the appendix with a list of 25 objectives including materials and activities. The numerous resources stress differentiation and high-end learning. The links to other subject areas are interesting and encourage independent projects. However, there should be a greater focus in this chapter, as well as the entire book, on assessing the interests of students and using these interests in program planning. I also think there should be more emphasis on real-world applications, i.e. creating useful products for a specific audience.

Perhaps the chapter that best illustrates what the authors in this text believe and promote as appropriate math instruction for talented students is "Flexible Pathways: Guiding the Development of Talented Students." In this chapter, Eddins and House state "...our responsibility as educators is to offer flexible pathways along which gifted students can encounter rich ideas through challenging, nonstandard learning experiences" (p. 313). They recognize that there are different types of mathematically talented students and they make the important distinction between students who are experts at arithmetic and algorithmic applications and those who are creative problem solvers. They also emphasize that "although...much of what is good for gifted students also is good for their less-talented peers, the fact remains that gifted students have special needs that require both an enriched curriculum and a challenging delivery system" (p. 312). The chapter outlines an excellent unit for a secondary math gifted program which relates geometry transformations to matrices. It is filled with challenging activities and extensions in a variety of directions to stimulate mathematical thinking and creativity.

I recommend this text as a good resource for teachers seeking to understand how to meet the needs of gifted and talented math students within the context of the Standards. However, I offer a word of caution. Although there is a focus in many of the chapters on meeting the needs of talented math students in the regular classroom through extension activities, the actual unit of instruction presented as appropriate curriculum for gifted students is designed for an entire class of students in a special school or summer program. The reader must determine how to adapt this instruction to mathematically talented students in a heterogeneous classroom. This is not an easy task. In conclusion, since the heterogeneous classroom is becoming increasingly common at all grade levels, I would like to see a chapter added that would specifically deal with instructional strategies beyond extension activities for talented math students in the regular classroom at the elementary, middle school, and secondary levels. The MILP could be included as part of this curriculum. Key features that regular classroom educators should be made aware of include curriculum compacting, cluster grouping, interest centers, independent research projects based on student interest, mentoring, alternative assessment, and classroom management techniques.

Reference:

National Council of Teachers of Mathematics. (1989). *Curriculum and evaluation standards for school mathematics.* Reston, VA: The National Council of Teachers of Mathematics.

Three Models of Curriculum for Gifted and Talented Students

A review of *Comprehensive Curriculum for Gifted Learners*

Bruce N. Berube
The University of Connecticut
Storrs, CT

Comprehensive Curriculum for Gifted Learners (2nd ed.), by Joyce VanTassel-Baska, is an excellent resource in helping teachers develop challenging curriculum for gifted and talented students in their classroom. The book is unique in that it focuses exclusively on curriculum development and is geared toward all grade levels. Three curriculum models are emphasized throughout the book and each is explained in detail in the first chapter.

The emphasis of the *"content mastery model"* is on the acquisition of knowledge and skills that pertain to a particular subject area. The curriculum is determined in advance, and the goal is to have gifted students progress through that curriculum at their own accelerated pace. With the content mastery model, students are often pre-tested on a particular unit of study to determine what they already know. The information that the student has already mastered is usually eliminated from the unit, and the student is left to pursue the topics that he or she does not fully understand. There are several reasons why the content mastery model has not been implemented to challenge gifted learners. It is often difficult for a teacher to manage a classroom in which many students are progressing at their own pace. Also, educators often oppose using the model because the only modification that is made focuses on the pace of instruction, not the content that is taught. Gifted students do not examine an area of study more fully, they simply do it faster. Although there are some drawbacks to the content mastery approach, many excellent programs have been developed based on its key premises. A good example of this model is the Center for Talented Youth program (CTY) at Johns Hopkins University. The emphasis of this program is on recognizing students with outstanding talents in the field of mathematics. Beginning in the seventh grade, those students who score within the top three percent on standardized achievement tests are invited to take the Scholastic Aptitude Test (SAT) to determine their mathematical precocity. Those who score at or above 500 on the math section of the SAT are allowed to register for a 3-week summer program in which they study advanced topics in mathematics that suit their interests.

The *"process/product model,"* as the name suggests, is geared toward developing the skills necessary for students to conduct first-hand investigations of topics that are of interest to them. Emphasis is placed on

A Review of
Comprehensive Curriculum for Gifted Learners, 2nd ed.
Joyce VanTassel-Baska
©1994
Allyn and Bacon,
Boston, MA

COMMENTARY

developing solutions to real-world problems and concerns. The student produces a product that reflects what he or she has learned about a topic and usually presents the results to an interested audience. This approach is different from the content mastery model in that what is investigated is determined by the student, based on his or her interests. There is no set curriculum. As opposed to having students move quickly through material, emphasis is placed on in-depth study of a particular topic. The basic format involved in such an investigation would be as follows: 1) selection of a topic of interest and a problem related to that topic, 2) review of literature related to the problem, 3) acquisition of the skills necessary to investigate the problem fully, 4) development of tentative solutions to the problem, and 5) the creation and presentation of a product which reflects these tentative solutions and what the student has learned.

The third approach, known as the *"epistemological model"* or the *"concept-based model,"* places primary emphasis on the understanding of systems of knowledge as opposed to particular factual information. The themes and principles that have influenced human thought throughout history are given primary attention. The importance of relating these key issues to a variety of subject areas across the curriculum is stressed. The function of the teacher is to pose questions to the students that will stimulate discussion and lead to higher levels of understanding. An example of this approach is Lipman's *Philosophy for Children* program.

I have spent a significant amount of time describing these three models because they form the foundation of each of the chapters that focuses on particular subject areas. A question that immediately arises after reading about the three models is: "What model is appropriate for each subject area?" The answer to this question is both simple and complex. No one model is appropriate for a subject area to the exclusion of the others, although one model may work particularly well. For example, because the skills in mathematics are often taught in a sequential manner, the content model, with its emphasis on acceleration, may be the appropriate model for most learning situations. On the other hand, the epistemological model might be emphasized in social studies or the humanities where the importance of the key social and philosophical ideas that have shaped history are to be found. The author's primary goal is to incorporate all three models into each subject area so that they form a cohesive whole. As she states, "The synthesis of the content, process/product, and concept models has provided a clear direction for new curriculum work" (p. 12). In the following paragraphs, I will describe how a synthesis of the three areas developed by the author has been incorporated into the area of science.

The science curriculum discussed below was designed to meet the needs of students in grades K-8. The first step in developing the curriculum was to focus on the important concepts that are interwoven into many fields of science. The concepts selected by the author include: scale, systems, change, models, evolution, and reduction. The author uses the "system" concept to illustrate her point. The next step is to elaborate on the important generalizations that are involved in the concept. Such generalizations for the concept of systems include: "All systems have identifiable elements and boundaries" and "All systems experience input and provide output" (p. 203). The generalizations are then applied to particular fields of science such as biology or geology. Units are constructed on particular topics in these fields such as ecosystems or rocks and minerals. During the actual lessons of each unit, scientific processes are developed through hands-on experimentation. Particular content also is covered in each unit. Finally, the main concept is applied to nonscience areas such as economic systems in which particular processes and content are once again taught.

It may at first seem a bit overwhelming for a teacher to develop units that incorporate all three models of teaching in an effective manner. Before jumping into the particular subject areas, the author presents an in-depth outline of how curriculum is best developed. The plan is divided into seven stages which include such important subjects as assessing needs, establishing curriculum development teams, and evaluating what has been developed. One aspect I found to be particularly useful was a description of the steps needed to modify present curriculum to meet the needs of the gifted. Also, suggestions on how to create original units are included. Make no mistake about it, the process of developing curriculum, as envisioned by the author, is no easy task. It would take many hours of hard work and preparation to construct the type of curriculum the author is suggesting. The rewards of developing such a curriculum, however, would be many.

One of the few drawbacks of the book is that it is geared toward experienced teachers who are familiar with curriculum development. I would have liked to have seen more suggestions for inexperienced teachers about how they could attempt to modify the curriculum. Also, very little emphasis is placed on developing a challenging curriculum for all students. Many of the suggestions that are presented could be used with the majority of students, which the author does not stress. Overall, the book is excellent and a "must read" for those teachers who are concerned with making significant changes in the curriculum to provide for the talents and gifts of their students.

Talents Unveiled and Nurtured: Words & Images

A review of *Reach for the Moon*

E. Jean Gubbins
The University of Connecticut
Storrs, CT

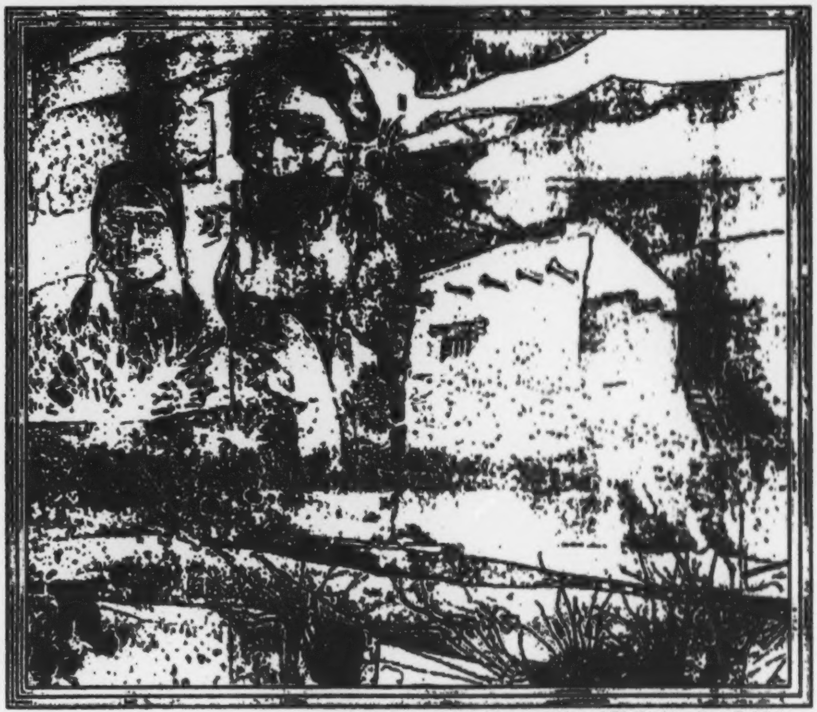
A Review of
Reach for the Moon
Poems and Stories by
Samantha Abeel
Watercolors by Charles R. Murphy
©1994
Pfeifer-Hamilton Publishers
210 West Michigan, Duluth, MN 55802

COMMENTARY

The talents of young students are unveiled in many different ways. Students may have remarkable strengths, accompanied by weaknesses in one or more academic areas. Sometimes we greet this information with questions, and other times we just look at the strength areas and believe that the person will be able to succeed on his or her own as new challenges are brought forth by the school system. It is not uncommon for people to look at a person's talents to compensate for anything that can't be done easily. Over and over we see examples of this happening throughout the school system. Although we think that there are protections built into identifying the strengths and weaknesses of students through various diagnostic and screening tools, it all comes down to a decision made by one or more persons as to what, if anything, should be done to intervene in the child's educational program. If a young student cannot manipulate simple numbers, most times you would seek further assessment of a broader range of skills. This, of course, is not always true.

Let me introduce you to Samantha Abeel, teenage author of *Reach for the Moon* published by Pfeifer-Hamilton. As a young student, Samantha's parents realized that she was very bright. However, she often came home from school very unhappy. When a child enters school we realize that there are many new adjustments that have to be made. Some students are able to meet the requirements of the school day very easily, and others are mystified by the challenges in the educational environment. Repeated unhappiness related to school attendance is usually a marker that something is amiss. Steps are sometimes taken at the early stages, and sometimes they are not. For Samantha, the years went by and still there were some problems. The problems became more apparent in mathematics. She could memorize almost anything and some of her compensation strategies and memorization techniques masked her problems in understanding mathematical concepts. As school got harder and harder, it was clear that Samantha would have a difficult time without outside help. Sometimes that help, of course, is not easy to obtain. Even though Samantha's parents were eager to support her any way they could, a solution was not readily available. Although an evaluation revealed that there were difficulties in Samantha's ability to work with numbers, special help was not recommended. The comment was "she is so bright, she'll be fine." It was further exclaimed that "be glad it's not a problem with reading. She can always use a calculator."

Such a dismissal of findings from a diagnostic evaluation causes us to question how students and their parents are protected against the educational system. If it weren't for Samantha's mother, who was going to persevere no matter what, Samantha's future would not have turned out as it has at this point in time. Her mother, obviously, was a teacher at heart and realized intuitively that it was important for Samantha to have opportunities to work on her strengths. She was also someone who was willing to go to the next step of contacting the teacher and encouraging her to plan a special program within the regular classroom.



Artwork reprinted with permission of Pfeifer-Hamilton Publishers

Samantha's parents approached the school once again. They were confident that their personal assessment of their daughter's abilities was quite accurate. They insisted that she be assessed and reassessed until a very clear picture of Samantha's abilities emerged. They also invited the involvement of the teacher of students with learning disabilities, the math teacher, the guidance counselor, and, finally, they were given help for their daughter. But, of course, the diagnosis was controversial for some of the people involved.

The controversy surrounded the idea that Samantha was indeed gifted, as well as learning disabled. The existence of these two exceptionalities was questioned. Sometimes people thought that they were paradoxical traits. Other times people referred to them as dual exceptionalities that needed attention; recognizing one without the other was not enough.

Ignoring the talents and remediating the disability has been the focus of recent research. Reis, Neu, and McGuire (1994) conducted a qualitative study for The National Research Center on the Gifted and Talented at The University of Connecticut that centered on the accomplishments of 12 college-aged students who were bright, but also had a disability. Most of these students were not identified as having a disability at a young age. Oftentimes it became clear that the students had some learning problems in middle or high school. The ultimate recognition of the disability in later years was quite surprising, given the force of the law behind special education.

Samantha's mother approached the teacher with a plan that was based on her personal insightfulness and intuitiveness. The weaknesses that Samantha revealed in mathematics were not to be the focus of her future educational program. The parents listened to their child; the school listened to the parents. Samantha was finally involved in special services. Samantha participated in an advanced writing class. Now her strengths were the centerpiece of her school experience. The image of school as a horrible place to be was going to change.

Samantha's writing talents were nurtured by her teacher, and further stimulated by a family friend's art work. Samantha's writing ability was extremely creative, and she captured images through words. When Samantha described herself in a section of a poem entitled "Self Portrait," she said the following:

To show you who I am
I crawled inside a tree, became its
roots, bark, and leaves,
listened to its whispers in the wind.
When fall came and painted the
leaves red and gold
I wanted to shake them across your
lawn
to transform the grass into a quilt, a
gift spread at your feet,

(continued on page 14)

(continued from page 13)

but their numbers eluded me,
so I turned a piece of paper into my soul
to send to you so that you might see
how easily it can be crumpled and flattened out again.

Samantha creates images for our eyes as we decode the words. The words are reactions to incredible paintings by Charles R. Murphy. Murphy's palette and images became the lifeline for Samantha to continue her poetry and prose and unveil her talents. *Reach for the Moon* by Samantha Abeel and Charles R. Murphy is an incredible book that must be read by all parents who find themselves in a similar situation to the Abeel's. A young child who struggles day to day and views school as a terrible place to be cries out for help. If those cries are not answered at first, the parents have to speak for their child and approach the school until the answer is in everyone's best interest.

The research of Reis, Neu, and McGuire mirrors some of the experiences of Samantha's parents. They described the pathways of creating academic success by outlining several factors that are reflective of Samantha's journey. The continued presence of maternal support was critical. Samantha had family members who were always there for her. A second factor also mirrors the qualities of young Samantha: determination, perseverance, ethics of hard work, and sheer stubbornness. In the research by Reis, Neu, and McGuire, the 12 students learned from their experience of dealing with adversity. Samantha, too, may have had several negative situations that she confronted. She may have come out of the experiences as a stronger person; however, no one would want to have a child experience such pain for so many years without available solutions.

The idea of the creative writing project for Samantha supports another research finding by Reis, Neu, and McGuire. The writing project was really a personal plan for academic success. Samantha had a lot of potential in writing. Compensation strategies that helped her with her writing were part of the package for academic success. Samantha developed her talents, instead of just focusing on any deficits. Her talents were recognized more and more by several people. Initially, her book of prose and poetry was published locally under the title *What Once was White*. The self-published book gained notoriety and Pfeifer-Hamilton redesigned, updated, and published it as *Reach for the Moon*.

Samantha is now a teenager, and she may encounter difficult experiences throughout her lifetime. She has probably gained a self-awareness of her talents that will aid her in dealing with adversity. Anyone who picks up the book *Reach for the Moon* will be astounded by the story of Samantha Abeel. The art, poetry, and prose make a complete package—a marriage of talents of an artist (who also may have had struggles with school) and a young woman whose words were set free because of the intricacies of Charles Murphy's paintings.

As you read Samantha's story, and passages from her mother and teacher, you are touched by the path that Samantha took throughout her early years to reach such a successful point. Samantha is now sixteen, and she may look back on her accomplishments with sadness and joy. You will cherish the beauty of Samantha's words as you read each passage. Her gifts of poetry and prose are remarkable. She makes us look at ourselves, and she projects who she will become. She has a view of the world that makes us realize where we have been and where we are going. The poem entitled *If You Want to See* illustrates Samantha's view of the world:

If you want to see the past,
look around you
for everything you do is
living out the legacy of those
who came before you...

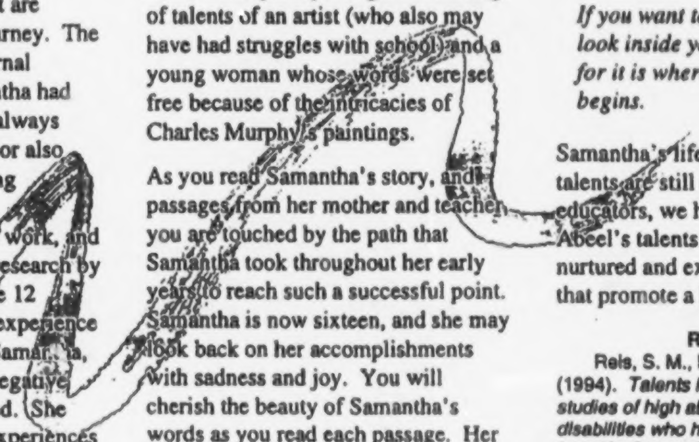
Feathers, the open plain
a life following
the heartbeat of a drum.
Peace. Simplicity.
The eyes of a people
looking with hope,
to the future.

If you want to see the present,
look around you
for it is what you are building
for those who will come
after you...

Poverty, not enough room,
the dreams have ended.
Feathers float to the ground, and
drums no longer beat their rhythm.
The eyes of a people
look on with misgiving
to the future.

If you want to see the future,
look inside you
for it is where all the building
begins.

Samantha's life is still building; her talents are still emerging. As educators, we hope that Samantha Abeel's talents will continue to be nurtured and expressed through ways that promote a love of learning.



References:

Reis, S. M., Neu, T. W., & McGuire, J. (1994). *Talents in two places: Case studies of high ability students with learning disabilities who have achieved* (Report No. 94110). Storrs, CT: The National Research Center on the Gifted and Talented.

NEWS BRIEFS

Computers
Creativity
Competition
Conference

The Educational Program for Gifted Youth (EPGY) and the Special Program for Elementary School Students (SPESS) at Stanford University offer computer-based courses in mathematics and mathematical sciences to high achieving students in grades K-12. Because the programs are computer based, students can participate from any region of the country. Advanced students are able to complete several years of college level mathematics and physics while still in high school. For more information about the program, including software and video demonstration material, contact EPGY, Ventura Hall, Stanford, CA 94305-4115, phone: 415-723-4117, fax: 415-725-7992

* * *

Lawrence Erlbaum Associated has assumed publication of the *Creativity Research Journal*, according to journal editor Mark A. Runco. *CRJ* is a quarterly publication dedicated to printing scholarly research encompassing a full range of approaches to the study of creativity. Journal submission information is available from Mark A. Runco, Editor, *Creativity Research Journal*, EC 105, California State University, Fullerton, CA 92634, phone: 714-773-3376, fax: 714-773-3314. Subscription information is available from Lawrence Erlbaum Associates, Inc., 365 Broadway, Hillsdale, NJ 07642, phone: 201-666-4110, fax: 201-666-2394.

Abstracts of select publications of The National Research Center on the Gifted and Talented are now available from *Husky Gopher* at The University of Connecticut. Any computer user with access to the Internet and a gopher client can use the service. Point your gopher client at *gopher.uconn.edu* (ask the person responsible for your Internet host what gopher client is available and how to use it). From the *Husky Gopher* main menu, access *Academics*, then *Education, School of*, then *Gifted and Talented*, and finally *NRC/GT*. Within the *NRC/GT* section you will be presented with a menu of abstracts.

* * *

ExploraVision is an innovative science competition that gives students of all grade levels (K-12) an opportunity to use their imaginations to create a vision of a technology of the future. Students are encouraged to combine research, writing, and artistic skills with their knowledge of science and technology. More than $300,000 in savings bonds and prizes will be awarded. Rules and entry material for the February 1, 1995 deadline are available from Toshiba/NSTA *ExploraVision* Awards, 1840 Wilson Blvd., Arlington, VA 22201, phone: 800-397-5679.

* * *

The Connie Belin National Center for Gifted Education will host the third biennial Wallace National Research Symposium on Talent Development. This symposium provides an opportunity for researchers and theorists from around the world to present their current work on talent development, creativity, and gifted education. The symposium will be held at The University of Iowa in Iowa City on May 18-20, 1995. Symposium proposals should be postmarked no later than December 15, 1994. For further information call or write: The Connie Belin National Center for Gifted Education, 210 Lindquist Center, The University of Iowa, Iowa City, IA, 52242-1529, phone: 800-336-6463, fax: 319-335-5151

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Javits Act: Charting Directions

E. Jean Gubbins
The University of Connecticut
Storrs, CT

The Jacob K. Javits Gifted and Talented Students Education Act has been reauthorized. The Javits Act of 1994 is part of Title X, Part B, and the act was supported because the Congress finds and declares that:

1. All students can learn to high standards and must develop their talents.
2. Gifted and talented students are a national resource.
3. Too often schools fail to challenge students to do their best work and to meet high content and performance standards.
4. Unless the special abilities of the gifted and talented students are recognized and developed, their potential for contributing to the national interest is likely to be lost.
5. Gifted and talented students from economically disadvantaged families and areas, and students of limited English proficiency, are at great risk of going unrecognized.
6. State and local education agencies and non-profit schools often lack the necessary resources to plan and implement effective programs.
7. The Federal government can best carry out a limited but

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The National Research Center on the Gifted and Talented

NRC G/T

Newsletter

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essential role of stimulating research and development in personnel training.

8. The experience gained in developing and implementing programs for the gifted and talented can and should be used as a basis to develop a rich and challenging curriculum for all students to provide all students with important and challenging subject matter to study, and to encourage the habits of hard work. (Section 10202$^{(b)}$, Findings and Purposes)

With these findings as a basis for the Javits Act, there will be another opportunity for school districts, educational agencies, and non-profit organizations to plan and implement model projects. Those of you in our network who are interested in competing for funding that will allow you to implement programs that meet the goals and objectives of the Javits Act should monitor the Federal Register for the announcement of the competition by the Office of Educational Research and Improvement, United States Department of Education, or send for the Request for Proposal as soon as it is available:

Contact: Pat O'Connell Ross
Gifted & Talented Education Program
Office of Research & Improvement,
Room 504
555 New Jersey Avenue, N.W.
Washington, DC 20208

There are two absolute priorities for the model programs:

- Priority one encourages the establishment and operation of model programs for serving gifted and talented students—schools in which at least 50% of the students enrolled are from low income families. Projects must include students who may not be served by traditional gifted and talented programs, including economically disadvantaged students, individuals of limited English proficiency, and individuals with disabilities. Projects must also emphasize high level content performance standards as well as innovative teaching strategies.

- Priority two focuses on technical assistance and information dissemination throughout a state or region. These projects should be designed to provide technical assistance and disseminate information as widely as possible. The technical assistance should include information on how programs and methods can be adopted to various school environments. Projects should involve cooperative efforts among state and local education agencies, institutions of higher education, and/or other public and private agencies and organizations.

The Javits Act will also establish a National Center for Research and Development in the Education of Gifted and Talented Children and Youth through grants or contracts to higher education or state educational agencies. We will be submitting a new proposal for such a center. What we have learned over the past five years of conducting our research studies will become the basis for designing a new proposal. We will seek more information on new questions that have emerged from the quantitative and qualitative research studies, and we will also chart new directions for the field.

As a result of the Javits Act of 1988, The National Research Center has implemented theory-driven research studies that have practical significance for the education of children and youth. What we have learned from the NRC/GT studies conducted from 1990 to 1995 will be shared at our conference entitled *Building a Bridge Between Research and Classroom Practices in Gifted Education*. The conference will be held in Connecticut on March 31 and April 1, 1995. We have also invited presentations by our collaborative researchers who have prepared a number of documents that focus on key issues in the field.

Throughout the conference presentations, we will emphasize the translation of "theory into practice." Those of you in our network should have already received your copy of the conference brochure. We are pleased to announce that James Kulik has also agreed to join us for a keynote presentation focusing on grouping practices.

During the conference we will also be conducting interviews with various presenters about their involvement with the Research Center's work. These interviews will become the basis for our next videotape. We would like to document the lessons that we have learned from the NRC/GT research by looking at the major questions and the emergent themes within and across studies. This videotape should prove to be a very informative summary of the work done by our researchers across the country, and we plan to have copies available for our Collaborative School Districts by the end of May.

I would like to thank you once again for all your efforts in supporting the new Javits legislation and the projects implemented by the Research Center. Your role has been critical to the field, and it will continue to be so throughout the next funding cycle of the Javits Act of 1994.

Featuring presentations by:
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Scott W. Brown
Deborah E. Burns
Carolyn M. Callahan
Gilbert A. Clark
Pamela Clinkenbeard
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8	8:30	[illegible]
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RECENT RESEARCH

Identifying Traditionally Underrepresented Children for Gifted Programs

Dennis P. Saccuzzo
Nancy E. Johnson
San Diego State University
San Diego, CA

Identifying Underrepresented Disadvantaged Gifted and Talented Children: A Multifaceted Approach was a 3-year grant funded from October 1990 through December 1993 by the U.S. Department of Education, Jacob Javits Gifted and Talented Discretionary Grant Program. The purpose of the grant was to evaluate various models for using traditional psychometric tests for selecting diverse students for gifted and talented programs. The testing ground for this endeavor was the San Diego City School District, a system serving over 123,000 children of whom approximately 29% are Latino/Hispanic, 38% Caucasian, 16% African-American, and the remainder composed of five additional ethnic backgrounds.

In support of the objectives of the grant, the district made available a large archival data set of all children who had been evaluated for giftedness between 1984 and 1990, and allowed us to input all data on children referred and evaluated during the grant period. In the end, an extensive data file of over 26,000 potentially gifted children had been created. Of these, over 9,000 had been given the Wechsler Intelligence Scale for Children-Revised (WISC-R) and over 16,000 were given the Raven Standard Progressive Matrices (SPM) Test.

During the 1984-1990 period, the WISC-R had been the primary instrument used to determine giftedness. Students who obtained a Full Scale WISC-R IQ of 130 or greater or a Full Scale WISC-R IQ of 120 with at least two of six risk factors (cultural, language, emotional, economic, health, and environmental) were certified as gifted. Extensive analysis of the data led to two major conclusions. First, there were inequities in the referral process. For example, based on their proportion in the district as a whole and assuming that giftedness is evenly distributed across ethnic backgrounds, Latino/Hispanic children were underrepresented in the referral process by a factor of 4 (i.e., the number tested represented only 25 percent of their actual proportion in the district). Second, an exhaustive analysis that evaluated all major systems and models for weighting WISC-R subtests revealed that the WISC-R could not be used to produce ethnically proportionate representation (i.e., children selected across ethnic backgrounds in proportion to their actual numbers in the district population). These findings and conclusions are documented in a monograph (Saccuzzo, Johnson, & Guertin, 1994) and in articles presently under editorial review.

Given the referral bias uncovered by our analysis of the archival data from the 1984-1990 period, the school district made an effort to achieve proportionate representation in the referral process through teacher training (to help identify potentially gifted traditionally underrepresented students) and through central nominations. At the same time, the district shifted from the WISC-R to the SPM in order to find a culture-reduced measure of intellectual giftedness.

There was a considerable shift toward proportionate representation in the referral process during the 1991-1993 period. Moreover, the use of the SPM in conjunction with an evaluation for risk factors led to the identification of thousands of traditionally underrepresented children who otherwise would not have been selected for the gifted program. While the SPM did lead to increased equity for all ethnic groups in that each ethnic group was selected in greater proportion to their numbers in the population as a whole, it did not produce a completely balanced result for all groups. Again, these results are presented in a monograph (Saccuzzo et al., 1994) and in papers in submission.

In brief, our results comparing the WISC-R and SPM revealed that the two measures had equal predictive validity and showed no differential validity as a function of ethnic background. The SPM proved to be far better than WISC-R in terms of a proportionate representation model of bias, but was not entirely free of such bias. We conclude, based on our findings and on previous reviews of psychometric tests (Kaplan & Saccuzzo), that no traditional test, as presently used, can meet the rigors of proportionate representation.

Given the large data set, we were able to conduct numerous analyses of special interest, as reported in our monograph. In one study, intellectually gifted children from diverse ethnic and cultural backgrounds as well as varying levels of risk were evaluated to determine the effect of risk on gifted children when intelligence level has been controlled. Each of the 7,323 children from six ethnic backgrounds had achieved a standardized intelligence test score (Wechsler Intelligence Scale for Children-Revised or Raven's Standard Progressive Matrices) at least two standard deviations above the mean. Although each child in the sample had demonstrated high intellectual potential, differences were found between groups defined on level of risk: no risk, low risk (one and only one area of risk), and high risk (more than one area of risk). High-risk gifted children were disadvantaged relative to those at low or no risk in all measures of both aptitude and achievement, as assessed with the Developing Cognitive Abilities Test and the Comprehensive Test of Basic Skills. Furthermore, those at high risk demonstrated lower WISC-R Verbal IQ scores than children at lower levels of risk.

Our data also allowed us to analyze gifted underachievers. A well-defined sample of gifted underachievers was compared to a sample of gifted high-achievers. All children had full scale WISC-R IQ scores of 130 or greater. Analysis of gender, ethnicity, and risk revealed a greater concentration of non-Caucasian males with at least two risk factors in the underachieving group. Our findings suggested that gifted underachievers are not as motivated or interested in acquiring traditional factual information as high-achievers. Creative teaching strategies are recommended to maximize the talents of underachievers.

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Gender Differences Between Student and Teacher Perceptions of Ability and Effort

Del Siegle
Sally M. Reis
The University of Connecticut
Storrs, CT

The attention of both educators and the general public has been focused on some of the problems facing girls in school. A report entitled *How Schools Shortchange Girls* issued by the American Association of University Women (Wellesley College Center for Research on Women, 1992) and a new book entitled *Failing at Fairness: How America's Schools Cheat Girls* by Myra and David Sadker (1994) indicates that our educational system is not meeting girls' needs and specifically mentions achievement scores, curriculum design, and teacher-student interaction as issues negatively affecting girls. Reis (1991) has advocated research that compares the school experiences of gifted girls with those of gifted boys in order to determine if recent changes in attitudes about females may have improved some of the issues facing these groups. This research is an attempt to add to the limited data-based studies available on this topic. In this study, the attitudes of fourth through eighth grade male and female gifted students about their ability, effort, quality of work, subject importance, and grades are investigated as are the attitudes of their teachers toward these areas.

RECENT RESEARCH

Background of the Study

Students usually indicate that effort and ability are the reasons they achieve or underachieve in school (Good & Brophy, 1986). High-achieving students tend to attribute their successes to a combination of ability and effort, and their failures to lack of effort (Franken, 1988; Good & Brophy, 1986; Luginbuhl, Crowe, & Kahan, 1975). Students who underachieve, however, often attribute their successes to external factors such as luck, and their failures to lack of ability (Ames, 1978).

Boys more often attribute their successes to ability and their failures to lack of effort (Nicholls, 1975), while girls often attribute their successes to luck (Reis, 1987) or to effort (Rimm, 1991) and their failures to lack of ability (Licht & Shapiro, 1982; Nicholls, 1975; Reis, 1987). The academic self-efficacy of young males is enhanced because they believe in their ability, and it is maintained during failures because of their attribution of failure to lack of effort. However, the same may not be true for young females because they may accept responsibility for failure, but not for success (Felton & Biggs, 1977).

Developing a strong belief in one's ability in the elementary and middle school years is important because "by the end of elementary school, children's [perceptions]...of ability begin to exert an influence on achievement processes independent of any objective measures of ability" (Meece, Blumenfeld, & Hoyle, 1988, p. 521). Gender differences have recently been noted in the academic performance of adolescent girls. The standardized test scores of girls in mathematics begin to decline during middle school years when girls' beliefs about their own ability lessen, and this decline may affect gifted girls in particular. The recent AAUW report indicated that "all differences in math performance between girls and boys at ages eleven and fifteen could be accounted for by differences among those scoring in the top ten to twenty percent" (Wellesley College Center for Research on Women, 1992, p. 25).

Teachers may be responsible for the beliefs students hold. As early as first grade, teachers tend to "attribute causation of boys' successes and failures to ability and girls' successes and failures to effort" (Fennema, Peterson, Carpenter, & Lubinski, 1990). Pintrich and Blumenfeld (1985) found that "teachers' feedback about work was a better predictor for children's self perceptions about their ability and effort than were other types of interactions with the teacher or with peers" (p. 654). Dale Schunk (1984) showed that successful students who received feedback complimenting their ability, rather than focusing on their effort, developed higher self-efficacy and learned more than students who received feedback complimenting their effort.

It has been traditionally reported that girls receive higher grades than boys in school (Achenbach, 1970; Coleman, 1961; Davis, 1964). Unfortunately, those high grades may actually negatively affect girls' self-esteem. As Silverman (1993) has stated, "one factor that clearly undermines gifted adolescent girls' self-esteem is their belief that high ability means achieving good grades effortlessly" (p. 304). Some students believe that if they must work hard, they lack ability (Dweck, 1986).

Purpose of the Study

The purpose of this study was to investigate whether female gifted students viewed the quality and importance of their work, effort, and ability differently than male gifted students. The study also investigated whether teachers perceived male and female students differently with respect to the quality of their work as measured by their grades, effort, and ability in the areas of mathematics, language arts, social studies, and science. Finally, student and teacher perceptions of the role of ability and effort were investigated.

Methods

Subjects

The sample included 5,515 fourth through eighth grade students and their teachers (n=1,223; grade 4 students; n=1,262, grade 5 students; n=1,041, grade 6 students; n=954, grade 7 students; n=906, grade 8 students). All of the students (n=2,709 males; n=2,676 females) were identified as gifted and talented by their school districts. A purposeful sample of 210 schools in 30 states was selected from the Collaborative School Districts (CSD) of The National Research Center on the Gifted and Talented (NRC/GT) at The University of Connecticut based on their willingness to participate, availability of appropriate age student population, and a research liaison to gather the necessary data. The Collaborative School Districts are proportionally representative of the student population with respect to socioeconomic levels and ethnicity.

Instrument

An instrument entitled the *Academic Achievement Survey* (Siegle & Reis, 1993) was developed and used to gather information from teachers and students about the quality of students' work, their effort, their ability, subject importance, and their grades in each of the four content areas of mathematics, science, language arts, and social studies. Separate surveys were developed for students and teachers. A 5-point response scale was used to assess students' perceptions about their ability, effort, subject importance, and work quality in all content areas. Teachers' perceptions of student ability, effort, and work quality were assessed on a similar scale by teachers who taught the specific content areas to students. Information about students' grades was also collected on a 5-point scale (A, B, C, D, F).

Each student who was identified as gifted and talented by each school completed a survey. The teachers who were responsible for teaching the identified students in mathematics, language arts, social studies, and science completed a teacher survey for the subject areas they taught.

Data Analysis

BMDP program 4V was used to perform separate Multivariate Profile Analyses of Repeated Measures for the teacher responses and for the student responses. The between terms for each analysis were gender and grade level. Ability, effort, quality of work, and importance were the variates for the student analysis. Ability, effort, quality of work, and grades were the variates for the teacher analysis. The repeated measures were the subject areas of mathematics, science, social studies, and language arts.

Effect size calculations were computed in order to compensate for

(Continued on page 8)

(Continued from page 7)

the extremely large sample size, since even a small difference among groups in a large sample may result in statistical significance. Effect size, the degree to which groups differ on measured variables, is the most effective way to examine results of studies with large samples (Cohen, 1988). The results showed small, but practical, effect sizes.

Results

Results indicated that teachers consistently rated female students higher than male students on effort and the quality of their work. However, teachers rated males and females similarly on their abilities, except in language arts, where they rated females higher than males. Female students received slightly higher grades than male students. Grades for both groups dropped from fourth through eighth grade, and mathematics and language arts grades were lower than science and social studies grades at the eighth grade level.

Female students rated their language arts ability higher than male students. Male students rated their mathematics, science, and social studies abilities higher than females (see Figure 1). Unlike the teacher ratings, male and female students rated themselves similarly on effort. The students believed they worked hardest in science. Female students rated the quality of their work and the importance of language arts higher than male students. There were no differences in how male and female students rated the quality of their work and the importance of mathematics, science, and social studies. Overall, student ratings of ability, effort, quality of work, and importance dropped from fourth through eighth grade.

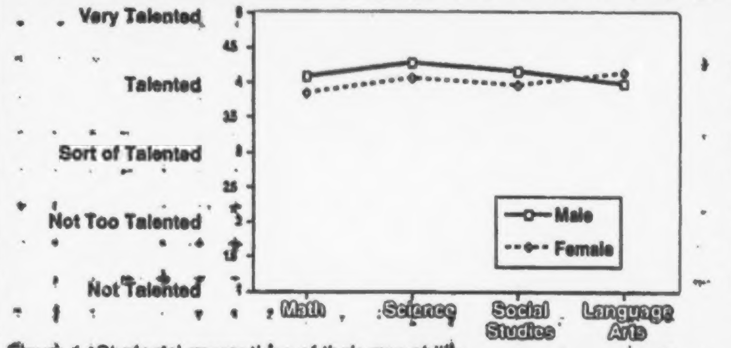

Figure 1. Students' perceptions of their own ability

Separate correlation comparisons were made between each of the variates for the teachers' ratings of their students and the students' self-ratings. The teacher responses indicated that high relationships existed between both ability and quality of work (r=.81) and between effort and quality of work (r=.80). The student responses were quite different. The students' responses revealed a high correlation between ability and quality of work (r=.68), but a lower correlation between effort and quality of work (r=.34). These patterns were similar for male and female students.

Conclusions and Recommendations

Females are clearly perceived by classroom teachers as working harder and producing higher quality work than males. Teachers reported a difference in the ability of gifted male and female students only in the content area of language arts. This finding may represent some progress with educators regarding gifted girls' abilities in the areas of mathematics and science. However, the same positive conclusion cannot be drawn about girls perceptions' about their own abilities. Gifted boys in this study reported stronger beliefs about their own abilities than did gifted girls in mathematics, social studies, and science. This is an area of concern because gifted girls are apparently still not recognizing their abilities in these areas to the same extent as gifted boys. A key factor in keeping gifted girls involved in higher level mathematics and science courses is their self-perception of ability. Despite some intervention programs which may or may not be implemented in individual schools and more equitable teacher attitudes about females in math and science, gifted girls are still not perceiving their abilities as highly as gifted boys in these areas.

The lower ratings reported for gifted boys in language arts is also an area of concern. Not only do the males perceive language arts to be less important, teachers are also viewing the ability, effort, and quality of work in language arts lower for males. Educators should emphasize the importance of communication skills with male students.

While the teachers in this study viewed ability and effort as being highly associated with the quality of work students produced, students do not share that view. Males and females alike reported a much stronger relationship between ability and quality of work than between effort and quality of work, indicating that they may be putting little to no effort into their work. Students may also be viewing ability as a major factor in the quality of their work instead of understanding that ability, without effort, will not result in the realization of their high potential.

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Unique Identification for Unique Talents

A review of *Identifying Outstanding Talent in American Indian and Alaska Native Students*

Bruce N. Berube
The University of Connecticut
Storrs, CT

A Review of
Identifying Outstanding Talent in American Indian and Alaska Native Students
by
Carolyn M. Callahan and Jay A. McIntire
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Washington, DC

COMMENTARY

In their book, *Identifying Outstanding Talent in American Indian and Alaska Native Students*, Carolyn M. Callahan and Jay A. McIntire provide a comprehensive overview of some of the key issues involving the identification of these two populations. The central question that the book attempts to answer is: What are the specific techniques that should be employed to recognize the gifts of students from these two groups? Due to a lack of research into the appropriate identification techniques for Alaska Natives and American Indians this question is difficult to answer. The authors do, however, provide many general suggestions as to how the identification process can be substantially improved.

The crux of the argument for more appropriate identification techniques is based on research which suggests that American Indians and Alaska Natives are severely underrepresented in gifted programs throughout the country. As the authors point out, the "average national rate of public school eighth-grade students' participation in programs specially designated for gifted and talented students is about 8.8 percent. The American Indian/Alaska Native participation rate is only 2.1 percent" (p. 3). The question that arises is: Why are American Indian and Alaska Native students not being selected for participation in gifted programs? The authors believe the answer to this question is that the procedures used to identify the majority of gifted students do not recognize the unique and varied talents of these two minority groups.

Before considering some of the suggestions presented for identifying the gifts of American Indian and Alaska Native students, it is necessary to point out the issues that are of concern in dealing with students from these two populations. Not only are these two groups distinct from the majority of American students, but there is great diversity within each group that needs to be considered. This diversity stems from the following four areas:

1) Geographic location: Students who live in rural, isolated areas often have little knowledge of what is expected of them from the mainstream culture that they find in school. Students raised in urban areas may not experience this difference.
2) Tribal differences: The traditions and customs, as well as the

language spoken, often varies from tribe to tribe.

3) Schools attended: Most American Indian and Alaska Native students do not attend special reservation schools. In most public schools they are a minority population. They often have a different first language and have many unique experiences and modes of expression which make it difficult to recognize their talents.
4) Cultural and social orientation: Students in these two groups may reflect various degrees of familiarity with the mainstream culture, ranging from being well acculturated to quite traditional in their cultural heritage.

Before beginning the identification process, the authors stress the importance of clearly defining what is meant by giftedness. They rely heavily on the definition of giftedness put forth by the U.S. Department of Education (1993). The characteristics they feel are important to recognize in gifted students include "intellectual ability, creative or artistic talent, leadership capacity, or excellence in specific academic fields" (p. 6). While these characteristics allow for a variety of talents and abilities, the authors point out that many definitions of giftedness often conflict with the beliefs and values of a particular tribe. Many tribes are against labeling students as gifted because this tends to separate them from other tribal members. A mesh between tribal identity and scholastic expectations must be reached in order for these students to be successful.

Eight general principles are presented to help educators identify the broad range of gifts and talents that may be exhibited by American Indian and Alaska Native students. It should be emphasized that these recommendations are "general" in nature. This seems to be both good and bad. The recommendations provided can be applied to almost any subgroup of gifted students for which a broad and flexible range of identification techniques may be necessary. On the other hand, the principles should be more specific in order to provide for the unique needs of subgroups of the Alaska Native and American Indian populations. It should be noted that so little has been written on this topic that even general recommendations that provide a basic framework for later research into identification techniques are greatly needed.

Instead of explaining each principle in detail, I will comment on the central themes that run through the principles. First and foremost, the authors recognize the need for a broadened conception of giftedness which takes into account a wide range of talents and abilities. The authors cite the work of Howard Gardner and Robert Sternberg as particularly relevant in this respect. It is important to realize that many of the talents and gifts exhibited by American Indian and Alaska Native students reflect the culture of the tribal community in which they are raised. This may be particularly noticeable in music and art. Separate identification procedures need to be developed that are "contextually relevant" and grasp the true nature of the gift that is revealed. American Indian and Alaska Native students should not be lumped together as a general population, but regarded as an amalgamation of a diverse variety of subgroups.

To illustrate the unique talents of these two groups, the authors provide many examples of poetry and art produced by American Indian and Alaska Native students throughout the book. In fact, the art work on the front cover, designed by Vic Runnels, was a product of his son's inspiration. According to Runnels, his son Jason came up with the idea in kindergarten when asked to draw a turkey using the shape of his hand. Instead of drawing a turkey for Thanksgiving, Jason "drew faces in the fingers, people in the palm of the hand, eagles and suns in the sky, and fish in the water" (p. 76). When asked what the drawing represented, Jason stated it was "The Great Spirit watching over the earth" (p. 76). This certainly shows the unique gifts and talents that many students possess.

Some of the particular identification instruments that the authors recommend include parent, teacher, and community rating scales, and portfolio assessment. I believe portfolio assessment would be particularly useful, because it stresses the need to evaluate student products. This allows the identification to be appropriate to the unique talents that may be displayed by a particular student, from a particular tribe, at a particular time. Although the techniques mentioned above may be useful, it is stressed that no one form of identification should be used exclusively. Just as there are a broad array of talents, a wide range of identification procedures need to be used to identify these talents.

Even though the principles provided are general in nature, the authors do a good job of listing many of the characteristic behaviors and traits that are exhibited by particular groups of American Indian and Alaska Native students. Implications for identification based on these behaviors and traits are then provided.

Overall, I found the book quite informative. The authors skillfully emphasize the need to recognize the great diversity among these two groups and the multiplicity of talents that can be revealed by the members in them. I would have liked to have seen more specific recommendations, but as the authors point out, research in this area is just beginning.

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Classification Procedures for Gifted/Learning Disabled Students:

A Primer for Parents

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Storrs, CT

Robert is a 10-year-old boy who has been reading since he was 3. By the age of 5 he had read the entire Encyclopedia Britannica and was reading the newspaper daily. His early conversations began as a mimic of the adults around him but soon it was apparent that he was elaborating on his own. His interest in reading allowed him to learn a great deal in science and history, leaving his second- and third-grade teachers at a loss for material to teach. There is little doubt that Robert would do well in the fourth-grade gifted class, but placement has been held up by his difficulties in spelling. Robert's handwriting is almost illegible and his spelling is equally as bad. Most recently, he has been having difficulty handing in assignments because of his writing problems. Robert's fourth grade teacher has recommended that he be tested for a learning disability.

Jason is in third grade and because of his high language arts achievement, is a member of the enrichment group on Fridays. His classroom teacher wants to suspend his enrichment time because Jason is not keeping up in math. Lately, Jason has been acting out in class. He has trouble staying in his seat and has begun calling out in class. Jason also has trouble keeping his books and papers in order, and frequently loses his work. His behaviors are disrupting to both the class and to himself. A meeting has been set up with his parents, enrichment teacher, and resource teacher to make a plan for Jason.

Both of these children exhibit characteristics of gifted children and of learning disabled children. To be gifted and learning disabled seems almost like a contradiction of terms. You, as a parent, know exactly what it means for your child. It could be that your child is bright, motivated, verbal, and creative. It also means that she/he is having some trouble in school. Sometimes the problem could be in spelling, reading, or math. Above all, there is some discrepancy between what you know your child can do and what she/he is able to do in the classroom setting.

More often than not, for the gifted/learning disabled (g/ld) child, it is the lack of school achievement that is noticed first. The identification of a learning disability, however, may be delayed because gifted children have the ability to mask the problems. There will come a day when the teacher of your bright child will begin using words like "difficulty" and "deficiency." According to the federal government (PL 94-142), the definition of learning disabled

RESOURCES FOR PARENTS

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COMMENTARY

children is, briefly, that they show a discrepancy between achievement and ability. The criteria used to define achievement, ability, and discrepancy vary from state to state, but the law mandates that a team of experts looks at specific areas within expressive language, reading, and mathematics. These experts then make recommendations for educational placement and remediation procedures. There are several ways that schools remediate learning disabilities. Some schools have specific classrooms set up to accommodate LD students all day. There is also the option of using a resource room for part-time remediation. The child would report to the resource room at predetermined times each day or week. Some schools have teachers or teacher aides in the regular classroom to assist the students as they have difficulties with the work during the course of the day.

For those experiencing the classification process for the first time, the road can be a confusing collection of terms and opinions. Be sure to keep an open dialogue with the school, especially with teachers and school psychologists. Know that they are trying to help. You can help yourself by requesting appointments with those at the school who are involved. Get as much information from them, since procedures will vary from school to school. Some districts offer printed material and pamphlets. As a parent of a gifted child, you need to be sure the school understands all your child's needs. There will be areas that your child will excel in and areas that she/he cannot keep up in–both need to be considered.

The process generally begins with identification, then testing, followed by classification, and finally, intervention.

Identification: Unfortunately for g/ld children, they are recognized faster for their disability than their abilities. The identification can come from either the school or the home. In any event, someone notices that there is a problem. It can be that the child has high standardized test scores but low achievement in classes. She/he may exhibit specific problems like lack of attention, poor spelling, difficulty with memorization, and/or general disorganization. The teacher or the parent can request a screening with the school psychologist.

Testing: Probably the most controversial issue in education today is the use of testing. States will mandate that some form of testing be used to substantiate classification. Widely used is some form of IQ test, especially the Wechsler scales (WISC-III). The WISC profiles of g/ld children show distinct discrepancies between scores on each subtest. What you as parents want to see, though, is a wide variety of tests used in the evaluation. No one test should be used to evaluate your child's functioning. A psycho-educational evaluation should include information about emotional issues and achievement levels. How children feel, after all, can influence their motivation for school.

The evaluation should include the following types of testing (Note: tests listed are for example only and will vary from school to school):

Individual IQ:
- Wechsler Intelligence Scale for Children - III (WISC-III)
- Wechsler Preschool & Primary Scales of Intelligence (WPPSI)
- Stanford Binet Intelligence Scale-IV (SBIV)

Achievement Test Battery:
- Wide Range Achievement Test (WRAT)
- Woodcock-Johnson Achievement Battery
- Detroit Tests of Learning Aptitude (DTLA)

Some Form of Spatial Evaluation:
- Bender Visual Motor Gestalt Test

Social/psychological Functioning Inventory:
- Vineland Social Maturity Scale
- Adaptive Behavior Scale–Public School Version

and/or a Classroom Observation Checklist

You want the assessment to specify many forms of functioning: academic, social, and psychological. Does the testing account for all areas? Is there a "whole child" perspective? Most importantly, you want to see the report generated by the school psychologist prior to any committee meeting. You have the right to see what is written about your child and should expect enough time to read it. You may even want to arrange a meeting with the school psychologist so she/he can explain the report to you.

Classification: At some point a meeting will be scheduled so that classification can be discussed. In some districts this is called a Committee on Special Education or a Pupil Personnel Team. Whatever the name, this is where Individual Education Plans (IEP) are developed and classification made. The make-up of the group will vary with members of the committee and school personnel. Those conducting the evaluations should be present to make the case for appropriate programming. One thing to keep in mind if you are looking for a g/ld classification is that there may not be a gifted specialist on the committee unless you make a case for it. This is a question of enrichment as well as remediation, and accomplishing this requires the coming together of both sides. Above all, keep in mind that this is meant to be a coming together of concerned parties, not a battle about your child. You, as parents, are a vital part of the process. Your insights into your child are invaluable; if something does not correspond with what happens at

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(Continued from page 13)

home, then ask for clarification. Offer suggestions to teachers, if need be.

Intervention: Remediation is always the first concern of special education personnel. Certainly you would not be sitting in a committee meeting if your child did not need help with some skills. Don't let anyone forget that your child has talents that can be tapped. What better way to teach her/him to read than by using material that is interesting to the child? This is where your insight into home behaviors will help the school personnel understand. Above all, concentrate on strengths. Ask if it is possible to have enrichment as well as remediation. Sometimes you won't know unless you ask.

What Can Parents Do?

1. Be involved with your child and her/his schooling. Find out what's happening and not happening in the classroom. Be sensitive to the subtle signs from your child that needs (social and academic) are not being met. Boredom and frustration are always the most visible indicators. Find ways to do work at home that blend with what is happening in the classroom. More is not always the answer; sometimes the work has to be different to be effective.
2. Become an advocate for your child. Learn all you can about what is available in your school, district, county, and state. Become active in the PTA. Don't be afraid to let your voice be heard. There are many other parents in similar situations. Look for ways to utilize the resources of both special education and gifted education.
3. Spend time with your child and focus on activities that accentuate her/his strong points. Children with disabilities tend to concentrate on their own weaknesses. Help your child see that there are things at which she/he excels. She/he may never learn how to spell or read quickly, but there are things she/he can do quite well. Tap into creativity; help her/him find new ways to get information that does not frustrate efforts.

Most importantly, keep a positive attitude. This will facilitate the home-school relationship. The school is there to help your child learn; let them know you are, too.

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NEWS BRIEFS

Institutes
Books
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Conferences

Teachers of children with learning disabilities, emotional or behavioral disorders, hearing impairments, or attention deficits may be interested in attending the *Project* HIGH HOPES National Training Institute on July 10-14, 1995 at the American School for the Deaf in West Hartford, CT. Participants at the institute will interact with nationally-acclaimed experts in the field and observe students using interdisciplinary curriculum to solve real-world problems. *Project* HIGH HOPES is a federally funded Javits program which focuses on identification of potential for gifted behavior in science/technology, visual arts, or the performing arts in students with special needs. For more information contact: *Project* HIGH HOPES, P.O. Box 402, Danielson, CT 06239.

* * *

Over the last 12 years, the Center for Talented Youth (CTY) at Johns Hopkins University has become a major influence in American education with its world-wide talent search and advanced summer programs for talented fourth through twelfth graders. Based on 13 case studies from the CTY program, *Smart Kids–How Academic Talents Are Developed and Nurtured in America* by W. G. Durden and A. E. Tangherlini is an interesting, readable book about talented children and their education in the United States. In it the authors describe drawbacks in the current educational system and how improvements can be implemented. *Smart Kids–* is available for $27.50 from Hogrefe & Huber Publishers, P.O. Box 2487, Kirkland, WA 98083.

* * *

School districts with innovative ideas to motivate female students to pursue careers in science, mathematics, and engineering can tap into a National Science Foundation program. NSF's Model Projects for Women and Girls program annually supports about 17 projects of up to $100,000 each that design and implement highly focused activities to increase women's and girls' confidence in science, math, and engineering studies. For more information contact: Lola Rogers, Program Director, Division of Human Resource Development, Educational and Human Resources Directorate, NSF, Room 815, 4201 Wilson Blvd., Arlington, VA 22230, (703) 306-1637.

* * *

Educators interested in language arts programs for highly able K-9 learners will want to attend one of two training institutes being conducted by the Washington-Saratoga-Warren-Hamilton-Essex Board of Cooperative Education Services and the Center for Gifted Education at the College of William and Mary. A spring institute will be held at the College of William and Mary on March 5-7 at Williamsburg, VA. For registration information call Dana Johnson at (804) 221-2362. A summer institute will be held July 10-14 at Skidmore College in Saratoga Springs, NY. For registration information call Robin Gibbin at (518) 584-3239 (ext. 315).

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The National Research Center on the Gifted and Talented: Reaching the Destination

E. Jean Gubbins
University of Connecticut
Storrs, CT

I feel as if I have been on a long road trip since July 1990. That's when I signed up to be part of The National Research Center on the Gifted and Talented (NRC/GT). I thought I knew what I was getting into. I read the initial proposal for the NRC/GT, but didn't have a real sense of what it would take to carry out the planned mission. I hit the road without road maps or written directions. It is now May 1995 and the "road trip" for the NRC/GT ends within days. It is time to look back to see what has been accomplished.

When I view all of the multimedia products created by the NRC/GT, I am amazed at the level of productivity. A primary mission of the Center was to conduct theory-driven research that would have practical implications for administrators, teachers, schools, and parents. All the results of such research would be presented in practitioner-friendly products in different formats. The written words

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SPRING 95

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The National Research Center on the Gifted and Talented

NRC G/T

Newsletter

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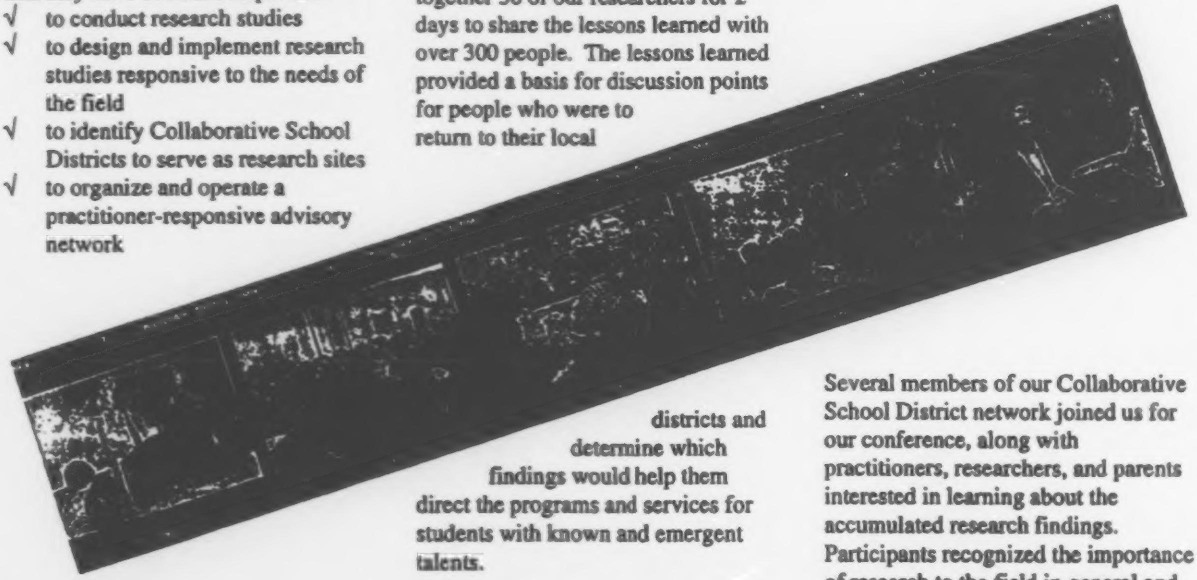
and visual images have documented our progress over time for millions of people around the world. Over the years, people have accessed the research information from journals, newsletters, newspapers, books, slides, satellite teleconferences, fax machines, computer networks, and computer disks. Those who preferred to hear about the research findings have joined us at presentations in several states and countries during local, state, national, and international conferences and workshops. Our staff has made over 830 presentations to ensure that the research results were not limited to periodical shelves in university libraries.

The talents and energy of our staff have made it possible to chart the course to reach our destination drafted in our original objectives. It is important to look back at the general categories of our objectives and note that they have been accomplished:

√ to conduct research studies
√ to design and implement research studies responsive to the needs of the field
√ to identify Collaborative School Districts to serve as research sites
√ to organize and operate a practitioner-responsive advisory network
√ to conduct a comprehensive needs assessment
√ to develop a comprehensive dissemination program to disseminate research findings by publishing articles and making presentations
√ to prepare a series of literature reviews, research syntheses, and meta-analyses
√ to establish a comprehensive database and research archives
√ to establish a system of monitoring and accounting of the Center's activities
√ to develop a broad-based theoretical framework for the study of the gifted and talented.

And we are still adding to our list of accomplishments! We have been working feverishly to crunch mounds of statistical data, to search for themes and patterns in reams of field notes and transcripts, and to prepare products. During all of this activity, we held our final conference in Connecticut on March 31 and April 1, 1995—*Building a Bridge Between Research and Classroom Practices in Gifted Education.* We brought together 36 of our researchers for 2 days to share the lessons learned with over 300 people. The lessons learned provided a basis for discussion points for people who were to return to their local districts and determine which findings would help them direct the programs and services for students with known and emergent talents.



As I presented sessions, attended sessions, and met with people formally and informally, I listened and responded to comments and questions. The discussions by all were informative and intriguing. The research was important to them and many of them appreciated the opportunity to be part of the Center's grand design to include hundreds of Collaborative School Districts across the country as research liaisons in conducting applied studies. In fact, in the past few month the following school districts have joined our network:

Cardinal Community School District
Eldon, IA

Erie Community Unit District 1
Erie, IL

Grosse Point Public School System
Grosse Point, MI

Marshall Public Schools
Marshall, MI

Onteora Central School District
Boiceville, NY

Quaker Valley School District
Sewickley, PA

Several members of our Collaborative School District network joined us for our conference, along with practitioners, researchers, and parents interested in learning about the accumulated research findings. Participants recognized the importance of research to the field in general and to their particular situation in their districts, universities, or homes. A sample of comments from conference participants serves as support for our original objectives:

We are a Collaborative School District and from the beginning we felt this [the NRC/GT] was important to us. I don't think that you can do good school programming without research.... Often we have done that and left the research to people beyond our control and certainly I appreciate the idea that this segment of gifted education can be backed by solid, good research, rather than hearsay or general types of research.

–Dennis Hansen
Omaha, NE

I want to be backed up by theory. I want to have an opportunity to be with the scholarship that was presented in the past 2 days. I feel that this center is representing very high quality research and the best of our leadership in the field of gifted.

–Gretchen Duling
Snyder, NY

Workshops are a rejuvenation.... It is refreshing to have an opportunity to talk to other professionals and to talk about the same problems and just to get validation for what you are doing. *–Sue McInerney*
South Windsor, CT

[The conference] has been a high! It has been a delight—being with other people in the field is a thrill because we tend to be isolated in our home districts.... The networking opportunities have been phenomenal! Not to exclude the quality of the presenters and of Joe Renzulli's tying together of the whole operation. One of the highlights of my career, and I am really not just saying that—it is the truth!

–Ruth Caley
Pearl River, NY

I am very excited about The National Research Center on the Gifted and Talented because. . . they are involved in [connecting] research to practice. Research in the past has always been pure research, and it has been conducted at the whim of the researcher.

The collegial atmosphere between the researchers and the practitioners at this conference is second to none.... I hope that we can continue this kind of dialogue and continue to be in touch with each other so we can have a good exchange—not only between the researchers and practitioners, but between the practitioners and researchers.... It is really a two-way street, and we need to work together to have the best possible education system.

–H. C. Juliette Harris
Bermuda

Comments such as these make the "high speeds and rocky roads" I traveled more worthwhile. The 5 years have been a whirlwind of activity, but the opportunity to conduct applied research studies on the education of gifted and talented students has been an unparalleled opportunity. The Research Center has been supported by the Jacob K. Javits Gifted and Talented Students Education Act of 1988, administered by the United States Department of Education Office of Educational Research and Improvement (OERI). I would be remiss if I didn't send special thanks to the Center monitors from OERI with whom I have worked, including Margaret Chávez, Ivor Pritchard, Patricia O'Connell Ross, Beverly Coleman, and Debra Hollinger. They have all guided the destination. The destination would not have been possible without the federal support and leadership.

So many of you have had a critical role in the research efforts. Each person has been a contributor to the national agenda that dates back to the Research Needs Assessment Survey—remember that form! Thousands of surveys were returned during 1991 (and yes, it is true that one was returned in 1994). The resulting data analyses provided the direction for research from 1991-1995. Well, the research path is coming to an end for now, and I just want to say how much I appreciate all the people involved in The National Research Center on the Gifted and Talented. Thank you is such a brief phrase, but it carries with it a sincerity that no other words can match.

The Road Not Taken

Two roads diverged in a wood, and I–
I took the one less traveled by,
And that has made all the difference.
–Robert Frost

Multiple Intelligences Help Teach Culturally Diverse Learners

Carol Ann Tomlinson
University of Virginia
Charlottesville, VA

In a unique university-school district collaboration, the University of Virginia and Charlotte-Mecklenberg (North Carolina) Public Schools are conducting a three-year study to determine the efficacy of using a multiple intelligence model to identify and teach primary age, low socioeconomic and/or minority learners. The collaboration is called Project START, an acronym for Support to Affirm Rising Talent.

The project has both practice and research components. The Charlotte-Mecklenberg Schools, using funding from a Javits grant, assume major responsibility for the practice component. Approximately 250 low socioeconomic and/or minority first and second graders from 16 schools have been identified for participation in Project START using a series of nontraditional, problem-solving tasks based on Howard Gardner's Theory of Multiple Intelligences. Through such activities as story-telling, building structures, developing strategies for keeping track of entering and exiting bus passengers during a simulation, and even disassembling and reassembling a household drainpipe, students in kindergarten and first grade had the opportunity last spring to display verbal-linguistic, spatial, logical mathematical, and personal intelligences.

Groups of approximately six or seven identified START children are placed in target classrooms. Their teachers participate in extensive, on-going staff training for developing curricula which utilize the child's intelligence strength to foster development of skill in language and math, as well as focusing on talent development in the intelligence areas themselves. START classrooms also have a multicultural, manipulative, and language-rich emphasis because of strong research indications of the effectiveness of such instruction for low SES and culturally diverse populations.

Further, all START schools have Family Outreach Programs which concentrate on making parents aware of the potential of their youngsters, helping family members participate in developing that talent at home, and involving parents in their child's

RESEARCH IN PROGRESS

school in a variety of ways. In some START schools, identified youngsters also work with community mentors who serve both to encourage talent development in areas of student strength and also to encourage general student success in school.

Staff members at the University of Virginia site of The National Research Center on the Gifted and Talented serve a dual role in Project START. They work as consultants for curriculum development, staff training, and development of family outreach and mentorship elements of the program. In addition, they have major responsibility for conducting an extensive 3-year research study, using both qualitative and quantitative methods, to determine the impact of the various interventions (e.g. START instruction, mentorships, family outreach) on achievement and attitudes about self and school. Further, they are studying the process through which teachers may come to differentiate instruction in START classrooms, and the impact of the program on families.

Project START should yield a variety of benefits beyond the obvious ones for participants and their families. In Charlotte, START will serve as a pilot for employing multiple intelligence identification and service throughout the school district's program for gifted and talented youngsters. For a much broader audience, START will shed light on strategies for identifying and nurturing talent in economically disadvantaged and culturally diverse populations, and provide insight on ways in which teachers can learn to adjust their instruction to invite success among diverse student populations and in expanded talent fields.

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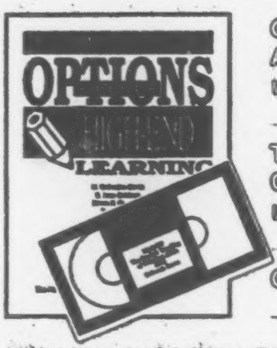

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A Follow-up Study of the Interaction Effects on the Classroom Practices Survey

Scott W. Brown
Francis X. Archambault, Jr.
Wanli Zhang
Karen L. Westberg
University of Connecticut
Storrs, CT

Introduction

It is clear that an alarmingly large number of gifted and talented students are unchallenged in our nation's schools. Few comprehensive programs for the gifted exist, and those gifted students who do get special attention receive it for as little as 2 or 3 hours per week in a resource room setting, with little or no modification in their regular classroom activities (Archambault, Westberg, Brown, Hallmark, Zhang, & Emmons, 1993; Council of State Directors, 1987; Cox, Daniel, & Boston, 1993; Westberg, Archambault, Dobyns, & Salvin, 1993). Studies by Archambault et al. (1993) and Westberg et al. (1993) have focused on classroom practices with gifted and talented students in regular classrooms across the United States using the responses of third- and fourth-grade teachers. The current study is an extension of this research conducted by The National Research Center on the Gifted and Talented (NRC/GT). The purpose of this study is to examine the factors that may affect the classroom practices of teachers with average and gifted students in the regular classroom.

The questions addressed by the current study are related to certain teacher and student demographic variables. There were three specific questions.

(1) What is the relationship of the teacher's experience to his/her instructional practices with average and gifted students?
(2) What is the impact of specific teacher training in gifted education on both the gifted and average students?
(3) What is the impact of the presence of various numbers of gifted students within classrooms on the teacher's instructional practices for all students?

Prompted in part by a series of studies and reports critical of tracking and homogeneous ability grouping (Carnegie Task Force on the Education of Young Adolescents, 1989; Goodlad, 1984; Oakes, 1989; Slavin, 1981; Toepfer, 1990), many school districts across the country are in the process of eliminating or downsizing their gifted programs and services. Thus, it is becoming increasingly apparent that the needs of gifted learners must be met in the regular classroom. Unfortunately, recent research (Archambault et al., 1993; Westberg et al., 1993) has found that the majority of regular classroom teachers are doing little to address these needs, and this result applies to classrooms and students in all regions of the country. These results are discouraging for supporters of gifted education, many of whom have long argued that a student's educational program should be determined by his or her needs, abilities, and interests (Gallagher, 1985; Maker, 1982; Parke, 1989; Passow, 1982; Renzulli, 1977; Ward, 1980) and that any single educational experience will not benefit all students equally (Parke, 1989; Stewart, 1982). Although there is some evidence (Westberg et al., 1993) to suggest that certain classroom teachers are able to meet these students' needs, we do not know at this time what distinguishes these teachers from the large majority of teachers who cannot, or will not, modify their instruction for gifted students.

Much has been written about the personal characteristics, competencies, and behaviors that distinguish outstanding from average teachers of the gifted (e.g., Story, 1985; Whitlock & DuCette, 1989). Research has also shown that gifted students prefer teachers who are older and more experienced (Bishop, 1967) and that teacher attitudes toward the gifted and talented are related to the amount of teaching experience (Rubenzer & Twaite, 1979). Thus, it appears that teaching experience may influence both how gifted students view teachers and how teachers view students. Despite a good deal of recent research on preservice and beginning teachers (e.g., Kagan, 1992), we know surprisingly little about the effect that teaching experience has on teaching behavior viewed over the longer haul, particularly the delivery of instruction to gifted students in the regular classroom. According to Schack and Starko (1990), inservice training programs have traditionally been the major vehicle for preparing teachers to meet the needs of the gifted. Research also suggests that teachers' attitudes, beliefs, and practices can be influenced by training received at the preservice level (Koballa, 1984, 1986; Leyser & Abrams, 1983; Parish, Nunn, & Hattrup, 1982). However, we know very little about the differential effect of preservice and inservice training on the types of instruction delivered to gifted students. We also know little about how teacher behavior is affected by the number of gifted students in their classrooms. Perhaps greater numbers of gifted students reduce the teacher's ability to meet individual needs. On the other hand, faced with a critical mass of gifted students, teachers might be motivated to become more familiar with gifted education practices and, therefore, be more able to meet their needs.

Methods

Instrumentation

The Classroom Practices Questionnaire (CPQ) is a six-page instrument focusing on the teacher, school district, classroom issues, and classroom practices. The original sample consisted of 8,000 third- and fourth-grade school teachers randomly drawn from the four Bureau of Census regions of the country and three community types (urban, suburban and rural). The CPQ was mailed to the teachers in the winter of 1991. The return rate was approximately 50%; 3,993 total respondents. A complete description of the sampling procedure and the structure of the CPQ is presented in Archambault et al. (1993).

On the CPQ, teachers reported the frequency of 39 individual classroom practices that they employed with average and again with gifted students. Frequencies were reported on a 6-point scale ranging from 0 to 5 (Scale: *0 = Never; 1 = Once a month or less frequently; 2 = A few times a month; 3 = A few times a week; 4 = Daily; 5 = More than once a* day). Earlier analyses of the CPQ indicated that there are six factors related to the classroom practices of teachers with gifted and average students, and that these instructional practices occurred slightly more frequently with gifted students than with average students. These factors were: (1) questioning and thinking; (2) providing challenges and choices; (3) reading and written assignments; (4) curriculum modifications; (5) enrichment centers; and (6) seatwork.

A repeated measures MANOVA with follow-up analyses was conducted. The model included the demographic variables (teaching experience, the amount of training, and the number of gifted students in the classroom) as the dependent variables and the type of student (average vs. gifted) and the six factor scores of the CPQ as the independent variables. The actual number of teachers' responses in each analysis varied according to the amount of missing data. The actual number of respondents for each analysis will be reported for each of the three demographic variables.

Training Experience

Teaching experience was categorized into five levels [1 = <6 years, (n = 157); 2 = 6-10 years, (n = 180); 3 = 11-15 years, (n = 178); 4 = 16-20 years, (n = 259); 5 = >20 years, (n = 303)] (N = 1077). The analyses revealed significant interactions between teacher experience and the type of student ($F = 3.31, p < .01$) and between teacher experience and the six factors ($F = 3.60, p < .01$). Follow-up analyses indicated that as teacher experience increased, differences in the average and gifted,

(Continued on page 8)

(Continued from page 7)

favoring the gifted students (i.e., differentiated instruction) also increased. This suggests the more experienced the teacher, the greater the differentiated curriculum for the gifted student(s).

The follow-up analyses for the interaction of teacher experience and the six factors across both types of students revealed that only the seatwork factor (factor 6) produced a significant effect ($p < .05$). Additional analyses indicated that the least experienced teachers reported assigning seatwork significantly less than those with 15 years or more of teaching experience. Thus, more experienced teachers appear to be more likely to assign seatwork than their younger colleagues.

Training

The amount of training in gifted education that teachers reported was coded into three separate groups [1 = no training, ($n = 364$); 2 = district or workshop training ($n = 349$); and 3 = college/university courses or a degree program, ($n = 325$)] ($N = 1{,}038$). The analyses of the training effect revealed a significant main effect for the training variable ($F = 24.39, p < .01$), as well as significant interactions between training and type of student (gifted and average) ($F = 4.88, p < .01$) and between training and the six factors ($F = 4.41, p < .01$).

Follow-up analyses indicated that teachers with either type of training (district or formal university training) reported making greater differentiation between the average and gifted students for factors 1, 2, 3, and 5. For factor 4, curriculum modifications, teachers who had district or workshop training provided greater differentiation than teachers who had no training. Also, teachers who had university training provided greater differentiation than those with district or workshop training. The higher the level of training, the greater the curriculum modifications. Interestingly, only factor 6, seatwork, yielded no differences in the classroom practices according to the amount of training, possibly because few gifted programs focus on assigning seatwork to students.

The Number of Gifted Students in the Classroom

The number of formally identified gifted children in the classroom was coded into three separate groups [(1 = 1-2 students, ($n = 504$); 2 = 3-4 students, ($n = 293$); 3 = >4 students, $n = 272$)] (total $N = 1{,}069$). The analyses yielded a significant interaction between the number of gifted students and the factors ($F = 3.71, p < .01$), but there was no significant main effect for the number of gifted students ($p > .05$).

The interaction indicates that for factors 1, 3, 5, and 6, (questioning and thinking, reading and written assignments, enrichment centers, and seatwork) there were no differences in the classroom practices reported by teachers according to the number of gifted students in their class. However, for factors 2 and 4 (providing challenges and choices, and curriculum modifications) there were significant differences ($p < .05$). For factor 2 there was no difference in the classroom practices when teachers had between 1 and 4 gifted students in their classrooms, but when they had 5 or more gifted students, the challenges and choices for **all students** increased. For factor 4, there was a significant difference ($p < .05$) in the amount of curriculum modifications made for all students when the class contained between 1 and 2 gifted students and when there were greater than 4 gifted students), but neither group was significantly different from teachers having 3 and 4 students.

Discussion

By examining the classroom practices of teachers with average and gifted students, examining teaching experience, teacher training, and the presence of different numbers of gifted students on regular classroom practices with all students, these results extend the findings of earlier research focusing on classroom practices. The conclusion that the more experience teachers have, the greater their ability to differentiate their instructional practices for gifted and average students is not surprising, but the extremely small actual difference among the training levels is discouraging. On a 6-point scale, the maximum mean difference between the experience levels was 0.06 for the average and 0.12 for the gifted students, with a maximum difference between the gifted and average students of 0.20 for the most experienced teachers. As experience increased, so did the difference in the treatment of average and gifted students, but again, the differences were very small.

The finding that teacher training in gifted education benefits all students is one that has been hypothesized by gifted educators for years. The current study provides evidence supporting this position. The classroom practices of those teachers trained in district or special workshop programs, and those with university or college training increased their classroom practices for all students, in every factor/practice except the use of seatwork. Additionally, college/university training had a significant impact above and beyond district and workshop training for modifying the curriculum with average students as well as gifted students.

Finally, the number of formally identified gifted students did not have an impact on the differences in several of the practices used with gifted and average students. Having greater than 5 gifted students in the classroom appears to positively impact the challenges and choices and curricular modifications that classroom teachers provide to average and gifted students.

Conclusions

The present study provides evidence that training in gifted education and the presence of gifted and talented students in the regular classroom positively impact the instructional practices of teachers for both gifted and average students. Teachers with formal training in gifted education (as opposed to district inservice training or no training at all) provided more curricular modifications for gifted students, and this finding should be of particular interest to individuals in higher education and school administrators. It suggests that administrators may want to examine prospective teachers' transcripts to see if teachers were enrolled in courses on meeting students' individual needs and courses in gifted education. The finding further suggests that faculty and administrators in higher education should make sure that their institutions offer these courses and encourage all education majors to enroll in them.

In addition to noting the benefit of formal training in gifted education, school personnel should be aware of the impact that district inservice training had on some of the practices used by teachers with gifted and average students, i.e., questioning and thinking, challenges and choices, reading and writing assignments, and enrichment centers. It reaffirms the "need for" and "benefits of" staff development at the district level. It also suggests, however, that training on how to modify the curriculum has been inadequately addressed or has not been provided at all in staff development programs.

The data from this study suggest that the number of formally identified students in classrooms does not have an impact on most of the teachers' classroom practices. However, the research finding that having more than 5 gifted students in the classroom results in more "challenges and choices" being provided to both gifted and average students is particularly intriguing. This suggests that the "cluster model" in gifted education has noteworthy outcomes. The "cluster model" (placing several gifted students into one regular classroom with a trained teacher) has not been used as much in recent years and, perhaps, it should be reconsidered as a viable provision for meeting the needs of gifted students in the regular classroom. While there is certainly no consensus in the literature about the most appropriate delivery system for gifted students, the results of this study suggest that if the needs of gifted are to be met within the regular classroom, we should consider the training of the classroom teacher and the student composition of the classroom.

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The Paradox of Academic Achievement of High Ability, African American, Female Students in an Urban Elementary School

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This qualitative study investigated the school experiences of 12 high ability, African American female elementary students in an urban school. The purpose of the investigation was to examine the self-perceptions these students held regarding their academic success and to explore why some high ability females achieve in this school setting, while other high ability females underachieve. For several decades, high ability children who do not achieve scholastically at levels commensurate with their mental abilities have been the focus of considerable concern of educators. While research has identified variables that have influenced the underachievement of high ability students, a paucity of research focuses on the achievement of high ability, African American females at the elementary school level. This study offers additional insight into the underachievement phenomena experienced by females in grades 4, 5, and 6 who live in an urban setting.

Through participant observation, ethnographic interviews, and document review, factors were identified which may influence patterns of achievement and underachievement in this population. The perceptions these females held regarding the reasons for their academic achievement/ underachievement, and the factors which influenced their academic achievement/underachievement were also explored.

Findings from this study indicate that numerous differences existed between the students who achieved and those who underachieved in this urban elementary school. The high ability achievers had a strong belief in self; employed learning and behavioral strategies which maintained their academic performance and regulated the effects of the negative peer culture; and acknowledged the importance of numerous support systems on their achievement including school- and community-sponsored extracurricular events, teachers, and the immediate and extended family network. The high ability underachievers employed negative behaviors to maintain their belief in self; adopted learning and behavioral strategies that made them vulnerable to academic failure; were unsuccessful in managing and regulating their peer culture; and acknowledged fewer support systems.

Effects of Teacher Training on Student Self-Efficacy

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Over 15 years of research has been conducted in the field of self-efficacy since Albert Bandura's seminal article was published in 1977. The popular construct has been applied to areas ranging from snake phobias to basketball free throw shooting averages. Although its educational implications have been extensively researched, little research had investigated the purpose of this study, which was to assess changes in students' self-efficacy and achievement after staff development on self-efficacy was conducted with their teachers.

A pretest-posttest control-group quasi-experimental nested design using a volunteer sample of intact groups was used. The sample included 872 fifth grade students ($n = 435$ males; $n = 432$ females) from a volunteer sample of 10 school districts in 6 states with 15 schools and 40 fifth grade classrooms.

This study consisted of two phases. In the first phase, the classroom teachers from the schools assigned to the treatment group received a handbook on self-efficacy and attended a videotape inservice training session on self-efficacy instructional strategies. The teachers of the control classrooms did not receive any special training.

During the second phase of the study, all of the teachers taught a 4-week mathematics measurement unit provided by the researcher. The treatment group teachers were expected to use the classroom management techniques demonstrated and practiced in the training workshop while teaching the mathematics unit.

Students of teachers who were trained in self-efficacy strategies showed significantly higher mathematics self-efficacy after 4 weeks of mathematics instruction than students of teachers who were not trained in self-efficacy strategies. No practical achievement differences were found between the two groups, although possible differences may have been limited by the curriculum of the measurement unit. No practical gender differences were found. There also was no interaction between experimental group and gender, nor between ability level and treatment. Students of all ability levels benefited from the self-efficacy strategies.

This study demonstrated that teachers can modify their instructional strategies with minimal training and that significant increases in student self-efficacy can be achieved during a short time period with minor changes in instructional style.

Regular Classroom Practices with Gifted Students in Grades 3 and 4 in New South Wales, Australia

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The Regular Classroom Practices Survey (RCPS) was conducted to determine the extent to which gifted and talented students received differentiated education in the regular classroom across New South Wales. This research paralleled the Classroom Practices Study completed in the United States. The survey focused on information about the teachers, their classrooms, and regions. Classroom practices, in relation to the curriculum modifications for gifted and average students, were analyzed. The survey sample was drawn from the three sectors of education: government, Catholic, and independent schools, within the 10 regions of New South Wales. This included 401 third and fourth grade teachers in government schools, 138 teachers in Catholic schools, and 67 teachers in independent schools. The research questions that guided this study were:

(1) Do teachers modify the curriculum content to meet the needs of gifted students?
(2) Do teachers modify their instructional practices for gifted students?
(3) Are there any organizational variations in planning to meet the educational needs of gifted children?
(4) Are there differences in the types of regular classroom services provided for gifted students in relation to the type of school or region?

Provisions for the gifted included variations in the content taught, the organizational strategies, and the instructional techniques used in the classroom. As the American study found, this survey showed that third and fourth grade teachers make only minor modifications in the regular curriculum to meet the needs of gifted students. Teachers who provided for gifted students encouraged participation in discussions, asked open ended questions and questions that required reasoning and logical thinking. However, these strategies were not unique for the gifted students. This result was apparent for all samples. One reason for the lack of provision made for gifted students may be the limited number of qualified teachers in the education of gifted students. It was found that 46 percent had no training in the area. In addition, there was a high percentage of teachers who had no knowledge of the current practices or options available for gifted students within their school or region.

The Successful Practices Study

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The following quote by John F. Kennedy exemplifies the attitude found in these successful schools:

> ***Not every child has an equal talent or an equal ability or equal motivation, but children have the equal right to develop their talent, their ability and their motivation.***

RECENT RESEARCH

Can you name a school that has a reputation for meeting the individual needs of students and, specifically, the needs of high ability students? If you can name one, do you know how or why this is occurring? These were among the questions that guided the University of Connecticut site of The NRC/GT as we conducted the Successful Practices Study. The research was designed to extend information gained from studies in 1990-91 conducted by the University of Connecticut. These included the Classroom Practices Study, which revealed that little instructional and curricular differentiation for bright students was occurring within the majority of regular classrooms throughout the country, and the Curriculum Compacting Study, which indicated that teachers who modified the curriculum for high achieving students could eliminate a substantial amount of their regular curriculum without any significant decrease in students' standardized test scores.

The overall purpose of the Successful Practices Study was to gather qualitative data to describe the practices used for meeting the needs of high ability students in third, fourth, and fifth grade classrooms. Purposive sampling was used to select 10 elementary school sites, and ethnographic case studies were conducted at each site (two urban, six rural, and two suburban.) The researchers, who spent several months gathering observational and interview data for the study, were Linda Emerick, Thomas Hays, Thomas Hébert, Marcia Imbeau, Jann Leppien, Marian Matthews, Stuart Omdal, and Karen Westberg. They wrote case studies describing the findings at each site, which will be part of a research monograph on the Successful Practices Study.

The findings from the study are informative and varied. In some situations, the classroom teachers implemented curriculum modification procedures, employed flexible grouping practices, provided advanced level content, or provided opportunities for advanced level projects. At some of the sites, the teachers collaborated with the other teachers at their grade level or with district curriculum specialists to provide more academic challenge to talented students. In some situations, the teachers and parents described the leadership of school principals or superintendents whom they believed were responsible for teachers' instructional practices, and some of these administrators were also strong advocates for the schools' gifted education programs.

Several themes emerged across the 10 sites, including the three themes below. First, the students were viewed as individuals, not as a conglomerate of young people in classrooms. Teachers had a vision for students, not a general "curriculum plan," that guided their efforts. If students already knew the content or how to do something, teachers would modify the curriculum and move on! Second, the educators in these schools were not satisfied with the status quo; they were making changes. They were not just providing lip service to the "reform movement" or "excellence in schools"; they were actively making changes, even when it meant experimenting with new programs and practices. They weren't afraid of change; they embraced it! And finally, a supportive attitude toward capable students was expressed by individuals at these sites.

As with all qualitative research, it is not appropriate for the researchers to make generalizations; rather, the consumers decide if generalizations are warranted. In the Successful Practices Study, the findings from each of the 10 sites and the themes across sites will, hopefully, inform practice and policy making.

Motivating Our Students:

The Strong Force of Curriculum Compacting

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COMMENTARY

One of the most common complaints by today's students appears in a statement no teacher receives very well — "Awww! This is BORING!" Frantically the teacher searches her files for some "quickie" activity that will miraculously invigorate her students with the passion for learning she had hoped to inspire. However, as Sally Reis, Deborah Burns, and Joseph Renzulli (1992) of The National Research Center on the Gifted and Talented at the University of Connecticut have discovered, love for learning has been halted for many students because of repetition within the classroom. Many students have already mastered the material being taught in class, and quickly tune out. As the teacher soon discovers, neither a fantastic lesson nor harder work will stimulate these students. "The sad result is that our brightest students are often left repeating lessons they already know, which can lead to frustration, boredom and ultimately, underachievement" (Reis et al., 1992, p. 2). As a result, Reis et al. devised a strategy for enhancing student achievement called "curriculum compacting." While it was designed for exceptionally bright students, the inherent fostering of positive perceptions of both competence and control allow this strategy to be used by teachers as a motivational tactic within the entire classroom.

What is Involved in Motivation?

It is important to understand the underlying principles of motivation when considering its place in curriculum compacting. An excellent reference to the components of motivation is Cheryl Spaulding's (1992) *Motivation in the Classroom*. In her book, Spaulding discusses the two key components of a student's perceptions of competence and control in the classroom and then relates six important principles underlying motivation. When referring to motivation, researchers (Deci, 1975; Deci & Ryan, 1985; Lepper & Green, 1978) find that two generic types usually occur—extrinsic and intrinsic. As Spaulding notes,

> Individuals are extrinsically motivated when they engage in an endeavor because they expect, as a consequence, to secure a reward or avoid a punishment. In contrast, individuals are intrinsically motivated when they engage in an endeavor because of an inner desire to accomplish a task successfully, irrespective of the rewards or punishments associated with it. (Spaulding, 1992, p. 8)

It is the "inner desire" that we, as teachers, want to and can stimulate in our students through curriculum compacting.

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The crucial elements to enhancing intrinsic motivation emerge from students' perceptions of their place in the classroom. The relationship between perceptions of competence and perceptions of control develops as a child matures throughout her school life. Fostering these self-perceptions should be a goal of teachers, in order to allow the students to feel confident in the task at hand and experience a positive learning situation. Spaulding (1992) further notes six instructional and management principles effective in guiding teachers to stimulate their students' intrinsic motivation. Essentially, these six principles involve creating a classroom that

(1) creates a highly predictable environment,
(2) allows for an appropriate balance between challenging and easy tasks,
(3) provides a sufficient amount of instructional support,
(4) promotes control opportunities,
(5) avoids social comparisons of students, and
(6) presents novelty, uncertainty, and challenges to the student.

Curriculum compacting, as a strategy for motivating students, supports three of the major principles of intrinsic motivation, as defined above by Spaulding (1992).

Creating Novelty, Uncertainty, and Challenges

The first principle deals with the importance of providing students with interesting and challenging options within the classroom. Spaulding supports the notions of both making class exciting, and yet also promoting the value of academic interests, in order to develop and maintain intrinsic motivation, even if the task is not novel and unusual (1992). Reis et al. (1992) agree with providing novel academic experiences for students in order to challenge them and stimulate intrinsic motivation. Two of the rationales for compacting the curriculum focus on avoiding repetition and meeting the needs of the students. First, they note past research indicates

> students already know most of their text's content before learning it....In a more recent study dealing with average and above-average readers, Taylor and Frye (1988) found that seventy-eight to eighty percent of fifth- and sixth-grade average readers could pass pretests on basal comprehension skills *before* they were covered by the basal reader. (Reis et al., 1992, p. 12)

Second, Reis et al. note that many of the needs of high ability students are not met in the classroom. As a result, many students react negatively to a classroom environment they perceive as boring. Ultimately, many bright students believe the best way to cope in the classroom is to do just enough to keep the teacher satisfied—nothing more, nothing less.

The practice of compacting the curriculum for students who show high mastery of a subject area provides students with challenging, yet exciting activities they can pursue with high perceptions of competence and control. The alternatives are numerous, all geared to create exciting options for the student and to promote a positive learning experience from which he/she will *want* to engage in more exploration. Reis et al. (1992) categorize the alternatives around five organizational topics: enrichment in the regular classroom; resource rooms; acceleration; off-campus experiences; and districtwide, schoolwide, or departmental programs. Such an adaptable list of activities allows both the student and teacher to investigate the options and focus on the student's interests. Reis et al. have appropriately utilized the strategy of presenting novel and challenging independent studies in the classroom—they understand the importance of the student's interests as key factors in motivation.

Providing Instructional Support

As described above, curriculum compacting is a strategy to restructure the regular curriculum for those students who have already mastered the required objectives. In doing so, teachers provide much support for these students by guiding them to the appropriate resources for a successful independent study. Reis et al. (1992) insist, in another rationale supporting curriculum compacting, that modifying both the pace and structure of instruction according to the individual student's needs are key elements in maximizing achievement, particularly for bright students.

Essentially, teachers monitor the actions of the students, allowing them to manage their time and how they will investigate their topic of study. By individualizing instruction,

> initial assessment determines where students should begin, and then the students work through the curriculum independently. In individualized programs, students receive more of their content instruction from the curriculum materials than from the teacher, who acts more as a materials manager, tester and progress monitor than as an instructor. (Reis, Burns, & Renzulli, 1992, p. 58)

When compacting the curriculum for a student, utilizing the management plan, "The Compactor," ensures that the student will have a successful experience based on individual abilities, further stimulating internal perceptions of competence. By eliminating the amount of time previously spent on repetitious material, the student is able to focus on activities that are personally more meaningful. Reis et al. (1992) insist that the teacher quietly monitors the student's progress, making sure to provide the necessary support, but allowing ultimate decisions to be made by the student. Such freedom to successfully accomplish a task designed around one's own interests inevitably promotes intrinsic motivation through self-perceptions of competence and control.

Promoting Control Opportunities

A third, and final, theoretical principle of intrinsic motivation emerges within the strategy of curriculum compacting. While "The Compactor" structures instructional support in a way that promotes perceptions of competence within the student, the enrichment activities pursued during the time saved by compacting also encourage self-perceptions of control. Reis et al. (1992) strongly urge that student interest be considered to ensure a successful compacting experience. "Building educational experiences around students' interests is probably one of the most recognizable ways in which schoolwide enrichment programs differ from the regular curriculum" (Reis et al., 1992, p. 103). This assertion stems from past research that indicates students object to limited choices within the confines of the curriculum and, as a result, negatively view the classroom as a place of very few opportunities. However,

> this is not to say that every independent study situation should be without limits. The teacher's own strengths and interests may lead him or her to place certain restrictions on general areas of study (for example, futuristics, colonial history, geology), but *within* these broad areas a great deal of freedom should be allowed in the selection of specific topics or problems. (Reis et al., 1992, p. 103)

While student interests should be identified by the teacher, Reis et al. warn the teacher not to push a student into independent study at the first sign of interest. Rather, they should encourage exploratory work around an area of interest through "Interest Development Centers." A student's interest can be piqued by including resources that disclose the process or methodology skills that an adult would use in a career field; narrative information; suggestions for specific activities, experiments or research; community resources; and display items.

Obviously, "Interest Development Centers" allow students to take control of learning the subject presented by the teacher. Along with the choice in enrichment activities, such centers provide an abundance of options for the student, a crucial element in curriculum compacting. To a student, the ability to make a choice equals an element of control within the classroom. Ultimately, this perceived control, along with perceptions of competence, will most likely lead to a love for independent learning.

Conclusion

Ultimately, the perceived elements of competence and control by students whose curriculum has been compacted stimulate intrinsic motivation. Reis et al. (1992) have developed a plan that allows a student to explore options, resulting in successful learning experiences and an inner desire to do more. Curriculum compacting revolves around the student and his/her interests—the teacher is merely a guide, a person there to provide support should the student need it. Sally Reis, Deborah Burns, and Joseph Renzulli have appropriately recognized the importance of individuality in structuring today's curriculum.

> All students need learning experiences appropriate to their individual abilities, interests, and learning styles. Individual uniqueness should be respected and provided for, and every effort should be made to adapt learning experiences to their development. (Reis et al., 1992, p. 62)

As an attempt to counter the problem of waning motivation, curriculum compacting emerges as a bold, progressive step to modify an otherwise outdated classroom structure. This classroom strategy promises to excite, enrich, and motivate our students—our future.

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The National Research Center on the Gifted and Talented

1996 Winter Newsletter

NRC G/T

University of Connecticut
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Yale University

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NRC/GT Through the Year 2000

E. Jean Gubbins
University of Connecticut
Storrs, CT

THE RESEARCH AGENDA for The National Research Center on the Gifted and Talented (NRC/GT) will continue through the Year 2000. In October 1995, the United States Department of Education, Office of Educational Research and Improvement (OERI), awarded a five-year cooperative agreement to the University of Connecticut. The consortium of the University of Connecticut; City University of New York, City College; Stanford University; University of Virginia; and Yale University will extend and enhance our focus on critical issues in the field of gifted and talented education. Funding for the cooperative agreement is under the Jacob K. Javits Gifted and Talented Students Education Act of 1994. The legislation focuses on identifying and serving students who have traditionally been underrepresented in programs for the gifted and talented, including individuals who are economically disadvantaged, individuals with limited English proficiency, and individuals with disabilities.

During the first five years of the NRC/GT (1990-1995), principal investigators planned the Year 1 studies. Subsequent studies initiated in Years 2-5 emerged from the results of the national research needs assessment survey (Reid, Renzulli, & Gubbins, undated). With the new award, OERI outlined several topics to be addressed through the proposed research. These topics included:

- identifying, teaching, and serving gifted and talented students;
- improving the education of gifted and talented students who may not be identified and served through traditional assessment methods and programs;
- using knowledge and experience gained in developing and implementing gifted and talented programs and methods to serve all students; and
- understanding the effects of gifted education programs on the educational achievement of students schoolwide.

The topics cited by OERI reflect several of the research priorities from the national needs assessment. Since the completion of the survey in 1991, we have revisited and updated the priorities with our advisory panel and consortium members. The major priorities that emerged from the needs assessment are addressed in our proposed research agenda for 1995-2000. The priorities include: (1) identifying, teaching, and serving gifted and talented students with known and emergent talents; (2) developing effective professional development techniques to improve the nation's ability to work with students with high abilities; (3) creating alternative approaches to recognizing and nurturing talents and abilities of students who have been underserved in the past; and (4) applying the pedagogy of gifted education to all students.

Abstracts of the research proposals for 1995-2000 follow.

Maximizing the Effects of Professional Development Practices to Extend Gifted Education Pedagogy to Regular Education Programs

Karen L. Westberg
Deborah E. Burns
E. Jean Gubbins
Sally M. Reis
University of Connecticut
Storrs, CT

Several studies conducted by The National Research Center on the Gifted

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and Talented (NRC/GT) have pointed out that classroom teachers have limited exposure to professional development practices regarding new techniques and new strategies associated with gifted education pedagogy. Given that classroom teachers often have the primary responsibility of meeting the needs of talented students in their classrooms, it is important to gather specific data on how the whole process of professional development in gifted education is addressed. In this five year study, a national survey of approximately 4,300 districts will be conducted during 1995-1996 (Year 1) to determine the purpose, scope, and content of professional development practices in gifted education.

In subsequent years, we will experiment with existing professional development modules on curriculum compacting, thinking skills, curricular options for high-end learning, and enrichment clusters to determine their effectiveness in providing administrators and teachers with theoretical and practical knowledge, skills, and model activities to meet the needs of talented students. We also will develop a new module on enrichment learning and teaching to help teachers apply gifted education pedagogy in regular classrooms.

Applying the Triarchic Theory to Ethnic Minority High School Students

Deborah L. Coates
City University of New York, City College
New York, NY

Students from Hispanic and African origin backgrounds are often underrepresented in programs for the gifted and talented and in higher education programs in mathematics and science. Reasons for such underrepresentation are complex and may include test performance, economic disadvantage, and educational practices. Sternberg (1985) developed a theory of intelligence responsive to the diversity of intellectual abilities that addresses issues of identification, instruction, and assessment. The application of Sternberg's theory will be studied. The purposes of the intervention will be: (1) to use the triarchic method of assessment and teaching to identify undiscovered gifted students among ethnic minority group students; (2) to use innovative strategies to teach high school students to use thinking skills based on the triarchic model; and (3) to develop supportive mechanisms to sustain the thinking skills.

Identifying, Teaching, and Evaluating the Talented Through Linguistic and Cultural Lenses

Shirley Brice Heath
Guadalupe Valdés
Stanford University
Stanford, CA

Oftentimes the identification of talents among young people is confined to the school environment. It is important, however, to go beyond school walls and consider and understand the recognition, nurturance, and application of talents. Students within and outside of school will be identified who exhibit talents for leadership, translation and interpretation, resilience, and teaching/demonstration.

Several populations will be the focus of using linguistic and cultural lenses to identify, teach, and evaluate talented students. The populations will include:

- Latino students in a middle-class community high school;
- Latino youth in community-to-school programs;
- White and Native American/Indian youth involved in community development and entrepreneurship in impoverished counties;
- African American youth in performing arts programs in urban centers; and
- Immigrant, local, and "sent up" youth (from juvenile detention centers) in rural comprehensive schools and county youth programs.

The Feasibility of High-End Learning in the Diverse Middle School

Carolyn M. Callahan
Carol A. Tomlinson
Tonya R. Moon
Donna Ford-Harris
Ellen Menaker Tomchin
University of Virginia
Charlottesville, VA

How can all learners, including gifted, minority, and limited English proficient students be appropriately served in a strong middle school environment? This study is designed to test the viability and impact of bringing together leaders and practitioners of middle school and gifted education to develop, execute, and test models of curriculum differentiation and alternative assessment strategies. One approach will focus on introducing a model of curriculum differentiation in a heterogeneous classroom, focusing on high-end learning. The second approach will investigate ways teachers use classroom performance assessments to evaluate and assess multiple levels of student achievement in heterogeneous classrooms. It also will assess the impact of using these strategies on instruction, student attitudes, and achievement.

Modern Theories of Intelligence Applied to Assessment of Abilities, Instructional Design, and Knowledge-Based Assessment

Robert J. Sternberg
Yale University
New Haven, CT

The effects of instructional strategies on gifted students based on Sternberg's (1985) triarchic theory of intelligence will be examined in grades 4, 7, and 10 in language arts, math, science, and social studies. According to the triarchic theory, intelligence has three aspects: memory-analytic, creative-synthetic, and practical-contextual. The principal research question is whether the triarchic theory of intelligence can inform identification, instruction, and assessment. To test this question and others, three treatments are proposed: (1) standard instructional regimen, emphasizing recall learning, but also incorporating thinking skills; (2) standard instructional regimen, but also emphasizing critical (analytical) thinking; and (3) instructional regimen infused with triarchic (analytical, creative, and practical) thinking.

Giftedness and Expertise

Robert J. Sternberg
Yale University
New Haven, CT

Potential and performance have long been sources of discussion and reflection among educators who seek to identify and serve students' emergent or recognized giftedness. The types of abilities and skills identified among young children may not be predictors of adult giftedness. This study of giftedness and expertise will compare the relative importance of reasoning ability (as measured by psychometric tests) and of deliberate practice in achieving expert levels of achievement through a computer related task requiring complex reasoning. Gifted students will serve as the expert group and nongifted students will be the novices involved in prototypical and novel tasks.

The expert task performance of established adult leaders in English, mathematics, history, and biological science also will be examined to set the stage for comparing and contrasting the expert and novice states for student and adult performers. Knowledge gained from these strategies will be used to create and validate an assessment tool that measures what is required for expert studentship and transition into expertise in a discipline.

Identification and Assessment of Tacit Knowledge for Youth Leaders

Robert J. Sternberg
Yale University
New Haven, CT

When we think about giftedness, we often think about academic giftedness and occasionally about musical or athletic giftedness. At least as important, however, is giftedness in leadership. This aspect of practical intelligence is critical. In this collaborative effort with Shirley Brice Heath of Stanford University, we will identify the tacit knowledge (i.e., knowledge that is not openly expressed or stated) needed for success in youth leadership; and develop a separate instrument to measure tacit knowledge for youth leaders. Youth leaders will be interviewed and observed to provide preliminary information for a measure of tacit knowledge. The inventory will then be subjected to validity and reliability procedures to ensure its usefulness as a measure of identification and assessment of tacit knowledge for youth leadership.

This five-year research agenda of The National Research Center on the Gifted and Talented focuses on large scale, basic research accomplished through surveys and small to medium scale, applied research in classrooms. We will, once again, call upon our Collaborative School Districts in every state and two territories (Guam; Virgin Islands) to participate in these studies. The specific responsibilities of Collaborative School Districts are:

1. To serve as locations at which research data can be gathered;
2. To provide locations where visitations can be arranged to observe successful practices in operation, to participate in the preparation of consumer-oriented guidebooks and video training tapes, and to provide technical assistance to school districts that express an interest in replicating successful practices; and
3. To assist in the documentation of biographical information about students so that contacts can be maintained for longitudinal follow-up studies.

Districts will benefit from the opportunity to:

1. Receive announcements of materials and staff development opportunities for teachers and students;
2. Participate in experimental curriculum;
3. Network with other school districts throughout the country;
4. Access the NRC/GT's WWW site for the latest research;
5. Receive copies of the NRC/GT newsletters summarizing the latest research activities;
6. Provide guidance and direction for the establishment of state and national policies for gifted and talented education; and
7. Access copies of all products produced by the Center on a cost-recovery basis.

Since Spring 1995, two districts (Suffield Public Schools, Suffield, CT: Laurence Public Schools, Laurence, NY) have joined our network now totaling 339. We would like to extend an invitation to other districts to become a Collaborative School District. Just contact us at the NRC/GT address on the back of this newsletter and we will send you a demographic profile and other pertinent information. We are especially interested in expanding our network in several states and territories, including North Dakota, South Dakota, Idaho, Nevada, New Mexico, Arizona, Utah, Oklahoma, Hawaii, Louisiana, Tennessee, Wyoming, Alabama, Ohio, West Virginia, Alaska, Delaware, Rhode Island, Puerto Rico, and American Samoa. Although we have

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representation in all of the states, we would like access to more school districts, and we are interested in working with the territories.

We are excited about our research plans and will continue to share our progress with you through our semi-annual newsletters and other publications from the NRC/GT. Thank you for all of your support and continued interest in our work.

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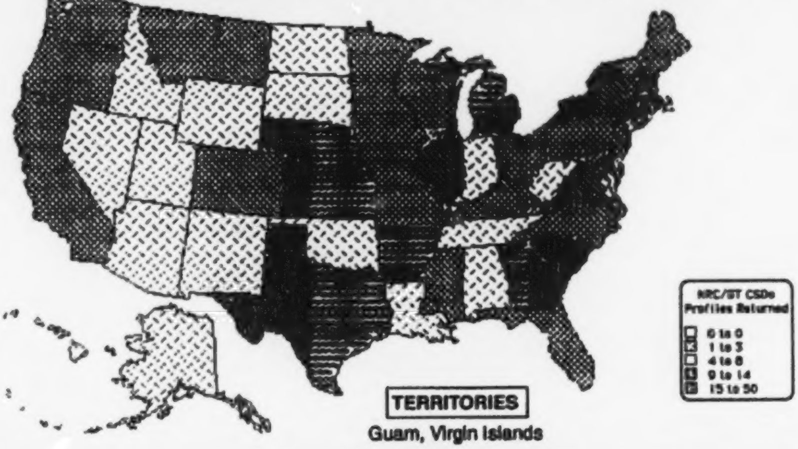
NRC/GT Collaborative School Districts



New Collaborative School Districts
Suffield Public Schools – Suffield, CT
Laurence Public Schools – Laurence, NY

NewsBRIEFS

Complete listings of NRC/GT publications and abstracts of selected publications are now available from our World Wide Web site at the University of Connecticut. Any computer user with access to the Internet can access this service. Our address is "www.ucc.uconn.edu/~wwwgt".

* * *

Legal issues in gifted education continue to be of interest to parents, teachers, school administrators, and concerned citizens. Dr. Frances Karnes is collecting information on court cases and due process hearings. If you have such information from your state, contact her at the University of Southern Mississippi, Box 8207, Hattiesburg, MS 39406-8207.

* * *

A new guide to help teachers develop more authentic instruction, assessment, and student performance is available from the Wisconsin Center for Education Research. Authors Fred M. Newmann, Walter G. Secada, and Gary G. Wehlage base their suggestion on studies of 24 restructured elementary, middle, and high schools nationwide. The $9.00 guide is available from Document Service, Wisconsin Center for Education Research, 1025 W. Johnson Street., Room 242, Madison, WI 53706, phone (608) 263-4214.

* * *

Genesis: Breathing Life into Learning through the Arts, a three-day working conference for teachers, artists, and administrators, will be held on the University of Montana campus in Missoula on June 19-21, 1996. Featured presenters include Howard Gardner, Mihaly Csikszentmihalyi, David O'Fallon, and Mary Clearman Blew. A $110 pre-registration is required and enrollment will be limited. For information contact: The Creative Pulse, UM School of Fine Arts, University of Montana, Missoula, MT 59812, phone (406) 243-4970.

* * *

A new book by Robert Abelman examines television-related issues pertinent to children in general and intellectually gifted kids in particular. *Reclaiming the Wasteland* offers parents and teachers a prescription for accentuating the positive and avoiding the negative outcomes of children's television viewing. Paperback copies of *Reclaiming the Wasteland* may be purchased for $18.95 plus $3.50 postage and handling from Hampton Press, 23 Broadway, Suite 208, Cresskill, NJ 07626, phone 800-894-8955, fax (201) 894-8732.

* * *

School reformers and curriculum designers may find their efforts to shake up schools complicated by the way in which secondary school teachers view the subjects they teach. A study published in the November 1995 issue of *Educational Researcher*, a journal of the American Educational Research Association, indicated that math and foreign language teachers rated their subjects as significantly more sequential and more defined than did teachers of science, English, and social studies. These findings suggest that teachers work in contexts defined by the subject matter they teach.

NEWSBriefs

Still Searching...

Julie D. Swanson
College of Charleston
Charleston, SC

"The journey is the reward."
Peter Senge, 1990

EARLY ON, A TEACHER OF the gifted imparts to his/her students the idea that there are many approaches to solving a problem and many right answers for most questions. As teachers of the gifted, we often emphasize the *process* of learning with our students, rather than focus on the end product. However, when we conduct research projects, we usually take an opposite tack. We focus on the end product, the final results of the research project, rather than extrapolating lessons throughout the project's life. This article relates the story of a different, more reflective view of one such research project. What follows is a description of the process of searching for answers, the journey of tackling an issue about which one cares deeply, and what is gained through the process.

Background

Funded in September 1992 by the Jacob K. Javits Gifted and Talented Students Education Act, Project SEARCH, Selection, Enrichment, and Acceleration of Rural Children, had two major goals similar to a number of other Javits projects. The first was to develop a method of identification for gifted students who were underrepresented in our pilot schools: students who were poor, rural, and African American. Once a more sensitive procedure for identifying giftedness was devised, the next goal was to develop a model which nurtured the gifts and talents of these students. Project staff hoped that through an inclusive model in the regular classroom setting gifted students would bubble up to the top—that is they would become more easily identifiable through their performance (Swanson, 1995).

The project grew out of the local school district's efforts to identify more African American children for the gifted and talented program. Data indicated that the chances of White, middle income students being identified as gifted were much greater than the chances of African American students of poverty. Further, students in suburban schools were more easily identifiable than students in urban and rural schools. The decision was made to focus the search in rural schools serving students of poverty and to experiment with several nontraditional approaches to uncovering gifts and talents.

The Plan

Three pilot schools, located in the rural South, were selected for the project before plans for the research were clearly articulated. The principals agreed to participate, without really knowing what would be required. The principals agreed because they thought the project would help their students. All of the pilot schools were Schoolwide Title I, rural, and majority African American.

Based on a review of the literature and with input from pilot teachers and SEARCH's advisory board, project staff developed a nontraditional screening procedure to use for identification. All students were screened individually in their kindergarten year with four assessments: the *Raven's Coloured Progressive Matrices* (Raven, 1976), *Thinking Creatively in Action and Movement* (Torrance, 1981), a teacher assessment checklist (Orth, 1986), and a peer nomination interview (Hensel, 1991). Three cohorts of students were identified as potentially gifted based on results of their individual assessments, and these targeted students were followed throughout the project. The percentage of each school population identified ranged from 10-15%.

Along with the identification component of Project SEARCH came the development of an ongoing, sustained program of teacher training. Summer institutes, workshops and professional meetings, ongoing coaching/consultation with a master teacher, whole group meetings, and classroom demonstrations provided teachers with the opportunity to learn new strategies, implement the new strategies in their classrooms, reflect on their practice, and engage in dialogue with others in similar contexts. Curriculum was developed and piloted in classroom demonstrations and became the basis for assisting teachers in deepening their understanding of what "gifted and talented" lessons might look like with their students.

One of the early issues that project staff and pilot teachers had to struggle with was the non-prescriptive nature of the teacher training. While the project staff came into the project with clear notions about the presence of giftedness in all segments of the population, they did not come in with a recipe or cookie cutter approach to finding and serving these under-identified students. Working through the ambiguities of multiple possibilities, and allowing for an evolution of ideas was essential but extraordinarily difficult. The pilot teachers were accustomed to being directed and told what approaches worked best. They had a difficult time shifting to the role of decision-maker and problem-solver.

The model for nurturing the gifts and talents of Project SEARCH students

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gradually evolved out of the teacher training, pilot curriculum, and identification components of the project. Developing an inclusive model was much more difficult than anticipated. Working to change classroom practices of a diverse group of teachers, each with his/her own philosophy of education, was a process that took time and sustained effort. The level of learning and change that occurred depended on the teacher's receptivity and the school environment's support for risk-taking.

The Lessons ... or Learning From Your Mistakes

If this article sounds similar to what you do with your students in your gifted class, then you're beginning to understand this journey. Undertaking a project such as this requires an understanding of the organic nature of change and a high level of patience and persistence. Mistakes are inevitable and must be used as springboards for learning. As Michael Fullan says in his discussion of change, "Problems are our friends" (1993).

The first mistake of Project SEARCH staff was belief in a magic bullet: the first Summer Institute. The proposed plan was based on the premise that the pilot school teachers would gather together during the first summer of the project and develop the model that would be the foundation of Project SEARCH. What happened? Only a handful of teachers and one of the three principals participated in the institute. Thus, lesson one was revealed: Teacher ownership is crucial.

The next mistake was underestimating the effects of a non-prescriptive approach. Project staff strongly supported the assumption that a non-prescriptive, context-responsive approach works best. However, when everyone is making his/her own path, finding his/her own way, how is progress towards project goals best assessed? How does a project end with results that are generalizable or replicable when the approach is non-prescriptive? How can teachers be convinced to shift their roles from trainees to learners? Project staff came to understand that clarity with teachers about how the teachers' classes would look and feel at the end of the project was essential. Teachers began to see what needed to be different about their teaching as their understanding of the desired project outcomes deepened. This mistake helped project staff devise a pilot curriculum that could be used across project classrooms. The pilot curriculum enhanced the nontraditional efforts used in identification and strengthened teachers' understanding of "gifted and talented strategies." The next lesson was that a nonprescriptive approach requires ongoing communication and strong support and encouragement for teachers.

From these mistakes, we created systems that successfully identify poor African American children and promote the use of gifted and talented strategies in regular classrooms. One Project SEARCH teacher commented, "Participating in this project is like getting paid to get an education." Project staff found substantive evidence that rural African American children are gifted and identifiable, but the process takes time, labor, and multiple ways of looking at children. A promising identification practice that emerged was the use of student portfolios. Student work samples were collected across project classes from tasks in the pilot curriculum. Establishing a rubric and assessing these portfolios was another way to find exceptional students.

Identification and labeling students as gifted began to lessen in importance as this project progressed. Many in gifted education are advocating for a broadened view of giftedness, but most continue to focus on methods of identification. Why not focus more on curriculum and instruction? Why not shift to a focus on building on students' strengths? (Renzulli, 1994). Why not work to improve the intellectual quality of the student's experience (Newmann, Secada, & Wehlage, 1995)? Project staff began to see the critical need to provide rich, challenging curriculum and instruction for all children, including the gifted. Challenging the student who scores in the 96th percentile on a Torrance test of creativity is just as important as challenging the student who has an IQ of 146. Providing for the student who can read and write music is as crucial as accelerating the first grader who is ready for algebra.

When it comes to changing teachers' practices, schoolwide involvement is essential. The culture of the school ultimately shapes the classroom environment. Recognition of the classroom teacher's reality means recognition of the obstacles a teacher faces when trying to change his/her practice. These realities include a lack of time for preparation and reflection and the measure of a teacher's worth by his/her "control" of his/her students (Lieberman & Miller, 1990). Teachers' fear of failure is an obstacle for experimentation with innovative instruction. Strong support must be in place if the teacher is to step into the unfamiliar territory of new and innovative teaching strategies.

Conclusion

While Project SEARCH's results were not based on a flawless research design, the changes that occurred were quite positive. The consulting teacher model developed as part of the project has continued to be used in project schools, supported by the local school district's Title I monies. The model is viable for students in the top quartile as well as the bottom quartile. The project's standardized tests scores indicate some positive achievement gains, supporting the use of this model with all students (O'Tuel, 1995). In fact, when federal funding of Project SEARCH ended in September 1995, the local Title I director funded continuation of the consulting teacher, the teacher training, and support materials. This continued support and partnership with Title I has benefitted gifted students as well as students who are low achievers.

Another positive change has been the local district's use of the *Raven's Coloured Progressive Matrices* as another tool in the identification process. The *Raven's* has helped to identify more gifted African American students and gifted English-as-a-Second-Language students. The project has resulted in increased interest around the state in identifying underrepresented gifted students. Further, the local district has planned and implemented a summer enrichment program for potentially gifted youngsters, including those in Project SEARCH. The project staff secured outside funding for a third summer institute for project teachers and G/T teachers from around the state. Some teachers participated for the third summer in a row!

The changes in teachers' practices have been more subtle. Several of the teachers have emerged as leaders in their schools. Two teachers enrolled in Master's degree programs during the project. One teacher who had been very traditional in her instructional approach has embraced the "gifted and talented" approach of the project's consulting teacher, and they continue to work together closely. Model classrooms have been established in each of the project schools to serve as places in the school for teacher professional development through modeling and coaching.

What is gained through a project such as this? How do projects like this strengthen efforts for gifted education? Aside from the direct impact on students, the most valuable aspect of this project is the education for those involved. Over 30 teachers and principals had the opportunity to learn about how to do a better job of teaching their potentially gifted students. The partnerships formed among classroom teachers, G/T teachers and staff, and Title I teachers and staff created a more focused effort in improving the education of all students, including those who are gifted and talented.

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A Tribute to Paul F. Brandwein

E. Jean Gubbins
Joseph S. Renzulli
University of Connecticut

SCIENCE EDUCATION in the 20th and 21st century will continue to be influenced by Dr. Paul F. Brandwein—scientist, author, artist, master teacher, and humanitarian. Paul died in September 1994, and we miss his presence and enlightened wisdom about so many educational issues. We had the special honor of publishing Paul's last book entitled *Science Talent in the Young Expressed Within Ecologies of Achievement* for our Research-Based Decision Making Series. When we first approached Paul Brandwein about the prospect of documenting his well-tested approach to working with the young to nurture and develop their science-proneness, he did not hesitate to agree. He saw the book as an opportunity to capture his thinking about science and education for two special populations: gifted students and disadvantaged students. His interests, prior work, and continual commitment to making science a joy for students were a perfect match to the Javits legislation which supported our Center. As a teacher at Forest Hills High School in New York City, Paul translated theory into practice as he experimented with eyes-on, hands-on, brains-on, minds-on techniques in science. He continued his approach for decades, even as he moved from high school to colleges and universities around the country and to a large publishing house—Harcourt Brace Jovanovich.

Paul chronicled his theoretical and practical philosophies in several books—two of which have had a great impact on our field:

Brandwein., P. F. (1955). *The gifted student as future scientist.* New York: Harcourt Brace Jovanovich.

Brandwein, P. F., & Passow, A. H. (Eds.). (1988). *Gifted young in science: Potential through performance.* Washington, DC: National Science Teachers Association.

When you read these books and others by Paul, you become acutely aware of his forward thinking about education. He wrote what he believed, what he experienced, and what he wished for the children of the world. The scientific minds of the young could be opened in so many ways through the guidance and the talent of educators. Perhaps this belief was behind the reason for one of his large scale projects for Harcourt Brace Jovanovich. Paul was integral to creating the science series—*Concepts in Science.* To this day, the first author remembers vividly the book emblazoned with his name—Paul F. Brandwein. The series took on special meaning because it offered the novice teacher a hands-on investigative approach. This science series was more than just teachers' and students' editions for various grade levels—leaving teachers and students to navigate their way through the pages unassisted. No!—*Concepts in Science* was a premier series with all the necessary tools, materials, instructions, rocks, minerals, fossils, chemicals, beakers, plastic tubing, measuring devices, etc. to turn traditional elementary classrooms into scientific laboratories. The laboratory atmosphere that Paul knew so well was now available to all who accessed the well-designed, forward-thinking science series. The series may have been concurrent with or preceded other curriculum reform projects of the 1960s. We can't trace the original release date for the series; however, the large closet-size cabinets and small table top compartments in green and purple will never be forgotten because they held the tools and keys to experience the wonderment of science. Students would think and act like professional scientists as they hypothesized and conducted experiments. Science went beyond words on paper—it was what it should be.

For years, Paul visited classrooms around the country to witness his philosophy in action. As a researcher with a quantitative orientation, he also carried the tools of the qualitative researcher—pens and journals—as he observed classrooms and recorded copious notes. He shared some notes in *Science Talent in the Young Expressed Within Ecologies of Achievement* and they are highlighted here as illustrations of science-minded classrooms:

Observations of a Combined Fourth and Fifth Grade Class (1989)

Aim: To study the concept of weight and lead to a concept of mass.

A boy brought up a problem one Friday: "I saw a boy balancing his father on a see-saw. The father was sitting near the hinge at the center; the boy at the end of the see-saw. How does this work?"

Several hands went up, but the class was ending, and the children and teacher agreed to take up the problem on Monday. By then, a girl had "invented" a model: A thin metal ruler on a pivot; four checkers on the ruler near the pivot; two at the end.

"If you know the length of the see-saw," she explained, "you can balance the weights. So *W* (weight of the body) x *L* on the other side." She drew a sketch of the apparatus on the board. "I checked it up in a high school textbook, but I thought up the checkers as weights and made the fulcrum using the edge of a box." She then answered questions, particularly about her "formula." (Brandwein, 1995, p. 44)

Observation of a Rural District of Fourth Graders (1964)

Aim: To illustrate concept formation, based on prior experience and leading to a construct.

In the introduction to the lesson, the teacher probed what his students knew, asking what kind of farms were in the area, what the crops were, what types of plants and animals they cared for, and so forth. He elicited all this information apparently not only to prepare the children's mind-set but also to set them at ease. Then, the teacher held up four hens' eggs—two brown, two white—and asked, "If these were hatched what would come of them?" The response, almost in chorus, "Chicks." One girl asked: "Are the eggs fertilized?" The teacher cracked one open; it was hard boiled. Laughter. "Nothing but lunch will come out of this one."

Asked the teacher, "Suppose they were fertilized—then hatched. What would happen in the next weeks or so?" The boys and girls described how a chick was brought to full development into a hen or a rooster. They discussed such matters as diet, for example. But the teacher noticed that one boy was silent, appearing inactive, and the teacher passed him an egg.

"Why not a duck, an ostrich?" the teacher queried. Softly, the boy said. "It doesn't have the DNA of these animals." With some encouragement, the boy was able to explain that DNA was in the cells of the growing chick. And, when asked—"What's DNA?"—he stood to answer, "deoxyribonucleic acid." He explained with some uneasiness that he learned about DNA first from a TV program; then, he went to an encyclopedia and to magazines; next, he consulted biology textbooks and had conversations with an older brother, then in high school. The construct developed before the end of the lesson: Living things inherit their traits from their parents. (Brandwein, 1995, pp. 41-42)

For decades, we only knew of Dr. Paul F. Brandwein as a scientist and an author. Then in 1981 he honored us with his presence at the University of Connecticut's Confratute, a summer conference/institute on gifted and talented education. Paul was a keynote speaker for an audience of hundreds of administrators and teachers from all over the world. He shared his talents and perspectives as a scientist in describing the historical, contemporary, and futuristic views of science education. He wove scientific theories and practical applications throughout the tapestry of musical compositions as he graced us with his artistic talent as a pianist. Paul combined words and music to send his message. That was the only time that the first author saw Paul Brandwein in person. The name on the cover of *Concepts in Science* took on a very special meaning.

Over a decade later, we were privileged to have several phone conversations with Paul as he prepared his manuscript for the NRC/GT. Paul talked about his work, his progress on the chapters, and his commitment to its completion. Our comments about the brilliance of his work were always greeted with "you're so kind." A man of genius, of scientific notoriety, and a master teacher was so humble. His comment gave us pause because we held him in such high regard. He was the one who was so kind in his unending commitment to science education. He truly made the science classroom a better place for children and teachers alike.

Paul's words were finalized for his NRC/GT monograph in 1994. Unfortunately, Paul never saw the published copy, since it was released in April 1995. He worked so long and hard on his manuscript, and we trust that it will influence the future of science education for decades to come. Dr. Paul F. Brandwein was truly the kind person, scientist, author, artist, master teacher, and humanitarian who has contributed so much to the scientific and educational communities.

Acknowledgments: The authors would like to acknowledge the contributions of Deborah Fort and Evelyn Morholt who dedicated so many hours to fine-tuning Paul's manuscript. Deborah Fort was thrilled when the book arrived at her door. She, too, was honored by the opportunities to collaborate with Paul on many projects. Unfortunately, Evelyn Morholt never saw the final copy due to her untimely death. We shared our gratitude with both collaborators many times, and we will always remember their contributions to this special project.

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Extending the Pedagogy of Gifted Education to All Students

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DURING THE 1994-95 school year, the University of Connecticut site of The National Research Center on the Gifted and Talented (NRC/GT) conducted a study to examine the effects of implementing an innovation called enrichment clusters with all students. Enrichment clusters are a new component of the Schoolwide Enrichment Model (Renzulli, 1994; Renzulli & Reis, 1985) that will be explained briefly later in the article. Major findings of this research are highlighted in this article and those readers interested in the complete results should refer to the technical report entitled *Extending the Pedagogy of Gifted Education to All Students* (Reis, Gentry, & Park, 1995). Additionally, for readers interested in implementing an enrichment cluster program in their school, a video training tape and manual have been produced as a result of this study. The videotape is entitled *Enrichment Clusters: Using High-End Learning to Develop Talent in all Students* (Gentry, Reis, Renzulli, Moran, & Warren, 1995) and will be available in April from the NRC/GT.

Enrichment clusters are designed to provide enrichment to all students during a specified time of the school week. The federal report *National Excellence: A Case for Developing America's Talent* (U. S. Department of Education, 1993) encouraged the use of gifted education strategies in general education and emphasized the role gifted education programs have had on general education:

> Over the past 20 years, while the regular school program focused on basic skills and minimum standards, programs for gifted and talented students served as laboratories for innovative and experimental approaches to teaching and learning. A variety of educational options were developed in programming and scheduling. Many new programs focused on complex thinking strategies and problem solving and used sophisticated teaching strategies . . . developed alternative teaching strategies and interesting curriculum approaches . . . . Now many educators believe that the knowledge and experience that gifted education has gained . . . can be used to upgrade all of education and are calling for this to be done. (p. 23)

Enrichment clusters meet these challenges as they are designed to offer all students an opportunity for challenging, self-selected, real-world learning experiences. Renzulli (1993) indicated that two reasons explain why practices that have been a mainstay of gifted programs are being absorbed into general education to upgrade the performance of all students. The first reason concerns the limited success of remedial-oriented compensatory education programs and practices, and the second reason is the success of practices developed in gifted programs and the need for these practices to be included in the regular curriculum. "All students should have the opportunities to develop higher order thinking skills and to pursue more rigorous content and first-hand investigative activities" (Renzulli, 1993, p. 2). The application of gifted program know-how into general education is supported by a wide variety of research on human abilities (Bloom, 1985; Gardner, 1983; Renzulli, 1986; Sternberg, 1984). This research provides a clear justification for much broader conceptions of talent development, and argues against the restrictive student selection practices that guided identification procedures in the past. This study was designed to add to the limited research base currently available which assesses the benefits of the extension of gifted education pedagogy to the entire school population.

The Enrichment Clusters

The enrichment clusters, one component of the Schoolwide Enrichment Model (Renzulli, 1977, 1994; Renzulli & Reis, 1985), are non-graded groups of students that share common interests and come together during specially designed time blocks during school to pursue these interests (Renzulli, 1994). "Like extra-curricular activities and programs such as 4–H and Junior Achievement, the main rationale for participation in one or more clusters is that *students and teachers want to be there*" (p. 64). Clusters involve all teachers and students as well as parents and community members. The model for learning used with enrichment clusters is based on an inductive approach to solving real-world problems through the development of authentic products and services. Unlike traditional, didactic modes of teaching, this approach, known as enrichment learning and teaching (Renzulli, 1994), creates a learning situation that develops higher order thinking skills and authentically applies these skills to creative and productive situations. Enrichment clusters are excellent vehicles for promoting cooperativeness within the context of real-world problem solving, and they also provide superlative opportunities for promoting self-concept. "A major assumption underlying the use of enrichment clusters is that *every child is special if we create conditions in which that child can be a specialist within a specialty group*" (Renzulli, 1994, p. 70).

Clusters are offered within the school day at a time that has been decided upon by teachers and staff. In some schools, cluster time is a two hour block in the morning or afternoon one day each week. A brochure is sent home describing the clusters, and all students sign-up for clusters that are based on their interests. The title and description that appeared in a brochure about clusters, and a brief commentary about the cluster written by one of the facilitators is included below to provide further elaboration of enrichment clusters:

> Invention Convention *(Brochure Description)*
> **Facilitated by Robert Erikson, Physicist and Supervisor of Teaching Labs, University of Connecticut; Max Nam, Physics student at the University of Connecticut; and Sandra Rijs, Third Grade Teacher**
>
> Are you an inventive thinker? Would you like to be? Brainstorm a problem, try to identify many solutions, and design an invention to solve the problem, as an inventor might give birth to a real invention. Create your invention individually or with a partner under the guidance of Bob Erikson and his students, who work at the Connecticut Science Fair. You may share your final product at the Young Inventors' Fair on March 25th, a statewide day-long celebration of creativity.
>
> Robert Erikson's commentary:
>
> In the Invention Convention Cluster, we worked with young people and tried to get them to come up with an idea, express that idea verbally, then be able to put it down on paper and come up with some kind of design. Once they came up with some dimensions and materials they needed, they could begin working to put together a project. In working on a project they had the opportunity to see what might go wrong, what might go right, and they had a chance to work with tools for the first time, and do things they hadn't done before. Each student selected his/her own project. If they weren't quite sure what they were talking about, we would prod them until they had a direction . . . but it was all on their own.
>
> There were two types of products I saw from this cluster—one was the finished product, the physical product they could grab hold of and work with and use. The other was the student's understanding what it means to take an idea and go all the way to the end, and his/her realization that it takes more than one try to finish. Students understood how to ask the question, "What do I do next? What if I did this?" The most enjoyable part of working with the cluster was watching the students as they began to dig in, pull out from inside, work towards a project, and see success with that project. Clusters are a superb idea.

Enrichment clusters are not intended to be the total program for talent development in a school, or to replace existing programs for talented youth, but they are one vehicle for stimulating the interests and developing talent potentials of the entire school population. They are also vehicles for professional development as they provide teachers with an opportunity to participate in enrichment teaching, and subsequently to analyze and compare this type of teaching with traditional methods of instruction. In this regard, it is hoped that clusters will promote a spill-over effect by encouraging teachers to become better talent scouts and talent developers, and to apply enrichment techniques to regular classroom situations.

Research Design, Methodology, and Treatment

The major goal of this study was to investigate the effects of the use of enrichment program strategies on the entire population of the school, including students, teachers, staff, and parents. A quasi-experimental design was used in this study with a combination of quantitative and qualitative methodologies. Quantitative methods included descriptive and inferential statistical procedures such as frequency, factor analysis, and multivariate analysis of variance and covariance with repeated measures. Qualitative procedures included: observations, interviews, and questionnaire data gathered through the use of participant observation (Spradley, 1980). Field notes, transcriptions of the interviews, document review, and all other collected data were coded and analyzed for patterns and themes. The coding process combined techniques described by Spradley (1979; 1980) and by Strauss and Corbin (1990).

A research team was used to facilitate and conduct the study consisting of a principal investigator, an on-site research associate, a research analyst, and two on-site research liaisons who implemented and collected the data. Teachers in both treatment schools

(continued on page 12)

(continued from page 11)

received training in how to implement enrichment clusters, and each teacher and parent in the school received an invitation to organize a cluster. The enrichment clusters met for 10 weeks in one school and for 12 weeks in the other school. Clusters were facilitated by teachers, parents, students, and community volunteers during one hour sessions that were scheduled weekly.

Sample

Two urban school districts agreed to participate in this study. Both were culturally diverse and contained a high concentration of economically disadvantaged students. One district had a minority population of 42.9%, and the other district's minority population of 35% consisted primarily of Hispanic students, many of whom had limited English proficiency. Two elementary schools were designated as treatment schools that would implement the clusters, while a third elementary school that was similar to the treatment schools in terms of size and ethnicity was assigned to serve as a comparison site.

Research Questions

The research questions that guided the implementation of enrichment clusters and the collection and analysis of data for the study were as follows:

1. What are the effects of the implementation of enrichment clusters on students' interests, attitudes about school, and product development?
2. What are the effects of the implementation of enrichment clusters on parental attitudes about school satisfaction?
3. How do teachers in the groups differ with respect to their attitudes about the use of enrichment activities for students?
4. Do teachers in the experimental sites use strategies learned in organizing enrichment clusters in their regular classroom teaching?
5. In what way is advanced content used in enrichment clusters?
6. How many students complete products in the enrichment clusters and what is the achievement level of students completing products?
7. Does the quality of student products differ among students of various levels of achievement?

Results

Following is a partial summary of the results found in this research study. The data analyses were conducted on categories of *program success, student interests, student attitudes, student products, parental attitudes,* and *teacher practices.*

1. It was possible to successfully implement enrichment clusters in low socioeconomic, culturally diverse urban schools in which these clusters can be adapted and tailored to fit individual school schedules and needs.
2. Both schools that participated in the study continued the program during the next school year.
3. Cross age grouping by interest was successful in enrichment clusters.
4. Community members were actively involved on a regular basis in schools through enrichment clusters.
5. Total schoolwide enrichment could be provided and gifted education pedagogy was successfully extended to students of all achievement levels using enrichment clusters.
6. Attendance was higher on enrichment cluster days than on non enrichment cluster days.
7. Approximately 90% of the students completed projects in clusters, and there were no differences in the number of projects produced when examined by achievement, gender, special program placement, or ethnicity.
8. The quality of products was examined and no differences were found among various achievement levels of students. This suggests that it is not the academic achievement level of the student that is important in product development, but rather the level of interest and commitment toward the self-selected project in the enrichment cluster. When students of common interest work together toward development of a product, achievement does not appear to predict the level of the process of product development or the overall quality of the resulting products.
9. In both treatment schools, parents' perceptions about enrichment and their satisfaction with enrichment improved after the implementation of the enrichment clusters.
10. Teachers who facilitated or assisted with clusters began to use strategies from enrichment clusters in their regular classrooms. These strategies included using both content and methods. Content included such areas as the development of centers related to cluster content, the integration of cluster content into the classroom curriculum and lessons, and the use of ideas and community resources gained from the clusters within the classroom.
11. Teaching methods were another area that was influenced by the enrichment clusters. Teachers reported several categories of methodological influences including: considering student interests, using hands-on activities, allowing for student direction and choices, using interest groups within the classroom, encouraging student products and independent work, and concentrating on thinking skills.
12. Approximately 60% of the teachers said that clusters influenced what they now do in their classrooms.
13. Teachers used advanced content and methodologies in the enrichment clusters and provided challenges and choices to the students. The types of advanced content and the frequency of use are depicted in Table 1.
14. Over 50% of the teachers that facilitated clusters in their schools indicated that they transferred the strategies that they had learned and used in their enrichment clusters into their classrooms, although this had not been requested of these teachers as a part of their participation in the study.

Implications

This research study indicated that one type of pedagogy often used in gifted education programs can be extended to students who are not usually included in special programs for talented students. The students who benefited from this research study were from urban areas. Many were poor, had limited English proficiency, and had been repeatedly involved in remedial education programs. In one school, over 80 students were involved in special education programs and were bussed to this school because of its physical accommodations for students with disabilities. During the cluster program in this specially designated time in school, everything changed. Students left their classrooms and in a minute or two sped joyfully down the hallways to another room and another adult. Their evaluations of the program were extremely positive and indicated that enrichment clusters fostered excitement about learning and demonstrated the benefits of schoolwide enrichment for all students.

Table 1
Advanced Content and Methodologies by Frequency and Percentage of Use

	Strategy	School A	School B	Total
1.	Introduction of New Concepts and Advanced Content	52 (91)	62 (98)	114 (95)
2.	Development of Product or Service	49 (85)	48 (76)	97 (81)
3.	Teaching Specific, Authentic Methodologies	40 (70)	48 (76)	88 (81)
4.	Use of Advanced Vocabulary	39 (68)	39 (62)	78 (65)
5.	Use of Authentic "Tools" Related to the Topic	27 (47)	40 (63)	67 (56)
6.	Use of Advanced Resources and Reference Materials	25 (44)	38 (60)	63 (53)
7.	Use of Advanced Thinking and Problem Solving Strategies	26 (46)	27 (43)	53 (44)
8.	Integration of Creative Thinking	24 (42)	27 (43)	51 (43)
9.	Integration of Historical Perspectives	14 (24)	15 (24)	29 (24)
10.	Development of Presentations or Performances	9 (16)	7 (11)	16 (13)
11.	No Advanced Content Used	5 (9)	1 (2)	6 (5)

Note: Numbers in parentheses are percentages

Most teachers genuinely seemed to enjoy facilitating the clusters and they did not regard it as just another preparation. Interviews indicated that the teachers looked forward to having an opportunity to share their interests with students who have similar interests and learning styles. Additionally, the implementation of the cluster program also resulted in the recruitment of many parents and community members into the school in roles that many of them had not previously pursued. This role allowed parents to share talents, areas of expertise, hobbies, and special abilities, and many of them were delighted to be able to be more involved in the school and have their children's teachers know them in a different way. The same was true for many community members who facilitated clusters. The implementation of enrichment clusters may then provide a triple opportunity: enrichment learning opportunities for all children, professional growth opportunities for teachers in differentiation strategies and in enrichment learning and teaching, and opportunities for parents and community members for more involvement in the school.

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Stimulating Student Creativity: A Review of *Creativity in the Classroom*

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AS THE TITLE OF THE book suggests, *Creativity in the Classroom*, by Alane Jordan Starko, provides practical suggestions for teachers interested in how best to incorporate creativity training into the curriculum. The book is divided into two main parts, the first of which deals with theory and research as it pertains to an understanding of this ambiguous construct. What is particularly interesting about the first section is that it is "teacher friendly." It explicates a variety of theories in such a way that the teacher comes away with how such theories provide a foundation for classroom practice. The author points out the concrete implications of what may at first appear to be abstract conclusions. In the second section, a distinct shift is made from theory to practice. Emphasis is placed on stimulating student creativity in content areas, and a description of creative thinking strategies that cut across a variety of domains. The purpose of this review is to highlight what I consider to be the important and interesting aspects of each section to provide "food for thought" for those interested in pursuing the book in more detail.

Starko begins her book by examining the question that researchers often wish to avoid, namely, "What is creativity?" After reviewing a variety of definitions, mainly concerned with describing adult creativity, the author arrives at the conclusion that most definitions revolve around two main concepts: novelty and appropriateness. For the adult, an idea or a product is considered novel if it adds something new to a particular domain. One cannot simply reiterate what is already known and hope to be considered creative. Appropriateness, on the other hand, is determined by "the fit" between a creative work and the cultural expectations of a particular society. The appropriateness of a creative endeavor can vary from one society to another, and in the same society during different historical eras. As long as the creative outcome "meets some goal or criterion," (p. 6) it is usually considered appropriate. Although novelty and appropriateness are two concepts intimately linked to understanding creativity, the author questions how these terms can be effectively applied to children. Do their works have to add something new to a domain? Are they appropriate only if they mesh with societal expectations? The obvious answer to both of these questions is no. Starko describes novelty and appropriateness as they apply to children's creative products and ideas as follows,

> We will consider children's efforts appropriate if they are meaningful, purposeful, or communicative in some way. If students successfully communicate an idea or endeavor to solve a problem, their efforts can be considered appropriate. If they do so in a way that is original, at least to them, we can consider the efforts creative. (p. 7)

This practical definition forms the basis of the concrete suggestions the author provides for enhancing student creativity in the classroom.

As with most books that attempt to provide a comprehensive overview of creativity, *Creativity in the Classroom* describes the latest research and theoretical advances. The "investment theory of creativity" put forth by Sternberg and Lubart (1991, 1993) is discussed, as well as Gardner's (1993) findings pertaining to the biographical factors related to creative productivity in eminent adults. It should be noted, however, that the author does not overlook important findings from the past. A significant part of Chapter 2 is devoted to summarizing a host of theories ranging from Freud's psychoanalytic doctrines to Maslow's distinction between "special talent" and "self-actualizing creativeness."

Before embarking on practical considerations, Starko devotes an entire chapter to what she labels "talent development" and the ideas that underlie this concept. Her humanistic approach to creativity is firmly based on research conducted by Bloom and his colleagues (1985) who recognized that the development of talent can be separated into three relatively distinct phases: 1) the early years, characterized by playful exploration within the domain of choice, 2) the middle years which focus on the technical mastery of principles and techniques within the domain, and 3) the later years, with an emphasis on the individual as a creative producer. This third and final phase represents a radical shift for the student, from a solver of predetermined problems, to one who must find problems in need of solution. While the practical implications of this research may not be readily apparent, Starko does emphasize the need for content and process immersion, before one can hope to solve problems effectively.

More research dealing with the nature of problem finding must be done. Starko provides suggestions for helping students locate interesting problems. She points out that most of the problems students deal with in school have one pre-determined answer, and one pre-determined method for arriving at that answer. A shift needs to occur so that students are allowed to postulate their own problems related to a topic, and then go on to conceive of ways to solve the problem in an efficient manner. Enabling students to select problems encourages divergent thinking in terms of the problems under consideration, and the solutions that are appropriate.

Amabile's (1989) emphasis on the relationship between creativity and intrinsic motivation is the final element considered by Starko as related to talent development. Simply stated, if a student does not find a problem interesting at a personal level, he or she will not put forth the time and energy needed to develop a meaningful solution. Amabile's research tends to point out that even positive, external motivation tends to suppress creative productivity. Of all the chapters in the book, teachers will most likely find Chapter 5, "Creativity in the Content Areas" to be the most useful. I say this because it provides numerous suggestions for incorporating creativity training into language arts, social studies, science, and math. As an organizing framework, the author points out several key considerations that apply to almost any content area. She emphasizes that creativity revolves around finding, focusing, and solving problems, as well as expressing ideas in unique ways. The student must assume the role of a creative person in a particular field, utilizing both content and methodology, to develop products that address specific problems.

What I liked most about the specific suggestions related to the content areas is that most seemed easy to implement. In fact, without realizing it, many teachers might already be fostering creativity in their classrooms. For example, in language arts Starko recommends the extensive use of writing to stimulate student creativity. It must be writing of a certain type, however, that emphasizes student selected topics and the writing process. With regard to social studies, teachers need to realize that it is not simply a collection of facts to be memorized. One must consider what the historian, geographer, etc. do to develop new theories and products. The big ideas involved in human history, as well as the methodologies used by practicing professionals must be employed.

In addition to specifics related to each content area, general strategies that apply to any domain are provided. Attention is given to the use of inductive teaching (in which students are presented with specific examples that they use to determine underlying principles and concepts), the use of simulation and role playing activities, and the importance of divergent questioning by the teacher. Popular techniques such as brainstorming, synectics, and creative problem solving are also described.

It should be readily apparent that fostering creativity in the curriculum will require creative forms of assessment as well. Traditional testing is simply not an adequate means of evaluating creative ideas and products. Starko calls for the use of "... authentic or performance assessment [which] means that students are evaluated on their performance of realistic, exemplary tasks" (p. 282). Such tasks, and the resulting assessment, focus on complex thinking and problem solving skills, are relevant and interesting to the students, and call for the development of an original product or a performance. The use of scoring rubrics is also deemed essential, as well as student self-evaluation.

Not only must assessment be reexamined, but the entire classroom organization as well. The teacher must first develop a sense of "psychological safety" by allowing students to take risks and experiment with new ideas. Students must be allowed to work independently for a part of each day, focusing on topics that make them want to learn. The development of interest centers can be helpful in this respect.

Starko also addresses the volatile topic of ability grouping. She is of the opinion that grouping which focuses on specific talent areas should be utilized to provide for the needs of high ability students. As she states,

> The most reasonable approach to grouping in schools is to avoid debating whether we should group and to decide what grouping arrangements best meet the needs of a given group of students for a particular activity. The effectiveness of rigid, long-term grouping based on ability can be questioned, but flexible, within- or between-class groupings based on particular academic needs is associated with increased achievement. (p. 277)

It is important to note that Starko does not rule out the use of cooperative learning with high ability students, but she does emphasize the need for individual accountability if it is to be effective.

There are numerous issues addressed by *Creativity in the Classroom* that I have not mentioned. Such topics include creativity traits, the use and abuse of creativity tests, and commercial creativity competitions. All are addressed by the author. To reiterate a point mentioned earlier, the greatest strength of this book is its emphasis on practical recommendations and specific techniques for fostering creativity in the classroom. Any teacher desiring to implement creativity into the curriculum will find this book invaluable.

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Everything You Need to Know About the NRC/GT: Web Site, Videos, and Texts

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WE ARE KNOWN AS THE National Research Center on the Gifted and Talented (NRC/GT). With all the technology available, however, we are essentially an international center. Our research is conducted in the United States and soon finds its way all over the world. Recently, Dr. Siamak Vahidi created a web site (www.ucc.uconn.edu/~wwwgt) for the University of Connecticut, highlighting the NRC/GT, Confratute—Summer Institute on the Gifted and Talented, Three Summers Program, and a new project—UConn Mentor Connection. All of these programs and opportunities for administrators, teachers, and students have a common purpose—*talent development*. The interest in talent development is universal. Our first contact on the new web site was from the Republic of Singapore and the second from Leeville, South Carolina. People are eager for more information about the research findings and the educational opportunities to further their own knowledge and expertise. The NRC/GT web site contains our mission statement, abstracts of all our publications to date, our products list, text of the Winter 1996 newsletter, names and addresses of the participating universities and research teams, and links to home pages posted by the University of Connecticut, City University of New York—City College, Stanford University, University of Virginia, and Yale University. Through these links you may learn about features of each university such as academics, admissions, cultural events, and sports.

Technology makes information readily available using a few keystrokes. If connecting to the NRC/GT by computer keystrokes is not an option for you, consider accessing our videotape collection. During the first five years of the Center, we developed a series of videotapes to keep you informed of our research results and to provide you with concrete examples of translating research into classroom practices. From our first live videotape on *Curriculum Compacting: A Process for Modifying Curriculum for High Ability Students* (Reis, Burns, & Renzulli, 1992) to subsequent ones on *The Explicit Teaching of Thinking Skills: A Six-Phase Model for Curriculum Development and Instruction* (Burns, 1993), *Curricular Options for "High-End" Learning* (Gavin et al., 1994), and *Enrichment Clusters: Using High-End Learning to Develop Talents in all Students* (Gentry, Reis, Renzulli, Moran, & Warren, 1995), we showcased classrooms as students and teachers experimented with strategies to promote the talents of young people. Videotape footage recorded the steps to reducing the repetition of mastered curriculum, defining and infusing thinking skills in multiple content areas, applying the strategies of curriculum differentiation, and designing and implementing enrichment clusters for a schoolwide focus on talent development. If you still need to know more about the NRC/GT, we have that information available, too.

Just over a year ago, we assembled our research teams and held our first conference entitled "Building a Bridge Between Research and Classroom Practices in Gifted Education" to provide people with another venue for

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first-hand information on the latest research findings. As presenters discussed their work with hundreds of practitioners, two film crews and a host of NRC/GT staff members conducted interviews with several researchers. We asked our researchers to reflect on their work and synthesize findings related to:

- nontraditional assessment;
- high potential, high risk learners;
- challenging learning opportunities; and
- professional development.

The videotape module entitled *The National Research Center on the Gifted and Talented: Reaching the Destination* (Gubbins, 1995) provides topical commentaries from our researchers. The module is designed for teacher trainers or as a self-study approach. Previewing the tape and reviewing the presentation guidebook provides a quick overview of the major topics. Segments of the presentation guidebook are followed by discussion questions and selected resources. Scanning the discussion questions aids you in deciding which findings you would like learn more about. The presentation guidebook serves as transparency masters to share with audiences or as print resources.

A sample of topical comments will hopefully spur further discussions among practitioners as you plan, develop, implement, and evaluate programs and services for students with known and emergent talents. The topic of nontraditional assessment is of primary importance under the Jacob K. Javits Gifted and Talented Students Education Act. How would you describe your present approach to screening and identifying potentially gifted and talented students? Do you have a comprehensive, defensible approach that is sensitive to the student populations of your district? Donna Ford, University of Virginia, reminds us:

> Gifted students should be assessed more than just identified. With identification you answer one question: Is the child gifted or not? You get a yes/no answer. Assessment is more comprehensive and thorough and tells us not only whether the child is gifted, but in what ways he/she is gifted so that we can meet not only academic needs, but social, emotional, and psychological needs as well.

A multi-dimensional assessment system should be created including information from parents, teachers, students, and peers.

> The multi-dimensional assessment must be comprehensive and defensible, and it must inform instruction. Identification, teaching, and evaluation should be regarded as integral links to improving the educational opportunities for high potential, high risk learners. *(E. Jean Gubbins)*

Designing and developing a multi-dimensional assessment system requires careful review and consideration of potential instruments that reflect the goals and objectives of the programs and services. The instruments should not be restricted to pencil and paper tests implemented during a single session.

> We see a combination of new instruments and new techniques. . . which involves people looking at children over a longer period of time trying to get involved in bringing out the talent that's there, actually eliciting talent as much as identifying talent. *(Carolyn Callahan)*

> We need to take a proficiency view, take a look at the strengths within cultures, take a look at the strengths of students, and find reasons within those strengths to provide services to students. *(Scott Hunsaker)*

Looking at the strengths of students is a change in mind-set for some of us because much of our earlier training as teachers centered on looking at the deficiencies of skills among students. Now we realize that a focus on strengths allows us to enhance students' abilities and work towards eliminating deficiencies by engaging them in the curriculum.

> We need to arrange opportunities within the curriculum for young people to engage in hands-on explorations in topics of their interest so that we can see talents emerge. *(Jann Leppien)*

When the focus on talents is not the primary philosophy of the school, students' strengths may not emerge. Sally M. Reis comments:

> We investigated the experiences of college age students with learning disabilities. Most had been very bright in elementary school and had not been identified for gifted programs. . .or programs for learning disabled students. . . . Their brightness was enough so that they could do well on most of the tests for learning disabilities. . . .
>
> As the students got older, the learning disability became more pronounced. . . . They oftentimes did not gain the compensation strategies they would have needed had they been participating in a program—they started to have more problems in school.

High potential, high risk learners can sometimes be overlooked unless we incorporate multi-assessment procedures and use the curriculum to elicit the skills and abilities.

> The talents of high potential, high risk learners will be unveiled by enriching the tapestry of the curriculum. The emphasis

> becomes more than just *talent recognition*—it is *talent development. (E. Jean Gubbins)*

Carol Tomlinson notes that creating challenging learning opportunities can be accomplished in many ways such as pre-assessing students' skills, amplifying learning opportunities, providing choices for students, and differentiating professional development opportunities.

> The easiest way to build in relevance and challenges in curriculum is to give young people some opportunity to select the work that they would like to pursue, ordinarily in the form of a project that leads to a product or some kind of service. *(Joseph S. Renzulli)*

Working with students' strengths and interests helps us to consider responses to questions such as:

- What is the level of challenge in our curriculum?
- What documentation exists that describes the challenge level of our curriculum?
- In what ways can we differentiate the curriculum to offer more challenging learning environments?

To make changes in screening and identification procedures and curricular options requires professional development opportunities for administrators and teachers.

> So much of our training in the past as classroom teachers has been prescription and didactic teaching strategies. We need to work with teachers to move the model of teaching to involve the children—to engage them in exploration. *(Jann Leppien)*

> We are asking teachers to think of students in terms of academic abilities, interests, and style preferences. This is a tremendous change for teachers. We need to provide teachers with time to make these changes. *(Jeanne Purcell)*

Changing instructional approaches and providing curricular options requires time:

> Time has to be built in so that people can make the changes personally before they can make the changes with respect to their instruction. *(Deborah Burns)*

Providing time and opportunities for professional development and follow-up opportunities with peer coaches results in more effective adoption and implementation of new strategies. Definite differences between the quality of teacher training and actual practice have been documented:

> Teachers who are successful in using differentiated strategies have been *shown how* to make modifications versus *told how* to make modifications. *(Karen Westberg)*

We continually try to show practitioners how to translate research findings into practices. With our multimedia approach, we reach our target audiences. Another text resource also lends itself to providing you with "everything you need to know about the NRC/GT": *Developing the Gifts and Talents of All America's Students: NRC/GT 1990-1995.* This monograph summarizes the scope of the NRC/GT and synthesizes the findings and themes across studies and commissioned papers. The findings and themes complement the topical commentaries by our researchers from the videotape described above entitled *The National Research Center on the Gifted and Talented: Reaching the Destination* by focusing on:

- characteristics and identification;
- special populations;
- program impact, options, and outcomes;
- professional development; and
- policy, program organization, and management.

Following this synthesis of the research, we provide readers with abstracts of over 50 publications and accompanying guidelines, recommendations, or conclusions. These briefing sheets offer a concise format for readers as you search for the most pertinent research-based findings to improve and enhance your programs and services for students with known and emergent talents. We will continue to provide practitioners with information about the NRC/GT through our web site, videos, and texts as we proceed with our research agenda through the year 2000.

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A. Harry Passow: Scholar and Friend

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THE FIELD OF EDUCATION often reflects the ebb and flow of ideas of scholars and practitioners, which at first blush sound new or cutting edge. Then we realize the ideas can be traced back to earlier viewpoints so well constructed they stood the test of time. Studying the evolutionary ideas results in a sense of admiration and respect for the person who penned the earlier thoughts. Dr. A. Harry Passow was such a person whose ideas make us proud to have known him as a scholar and friend. Dr. Passow died March 28, 1996, and his personal and professional legacies to the world are immeasurable. We treasure our encounters with him, whether they were face-to-face meetings, telephone conversations, or reading the numerous books and articles by such an incredible wordsmith.

Harry's many gifts and talents were evidenced in initial encounters with him. Just listening to him tell a story made you realize that he was destined to write. His words and ideas flowed so gracefully. He captured your attention with his gentle demeanor, sound grasp of relevant research, and keen perspectives from experiences. Over 40 years ago, Harry talked about issues that sound so current in the field of gifted and talented education in the 1990s. He was acutely aware of the importance of developing the talents of young people, studying the scholastic underachievement among bright students, determining the effects of ability grouping, and opening opportunities for disadvantaged learners before some of us even realized the importance of these issues.

In 1979, Dr. A. Harry Passow served as the editor of *The Gifted and the Talented: Their Education and Development, The Seventy-eighth Yearbook of the National Society for the Study of Education*. He assembled a team of scholars to prepare chapters on nurturing and educating students with high abilities. In a closing chapter entitled "A Look Around and a Look Ahead," Harry delineated some generalizations and principles that could have been written in response to educational issues of the 1990s. A few statements illustrate the prophetic relevance:

- A design for a curriculum for the gifted and talented should provide for differentiation of goals, content, instructional strategies, resources, and evaluation.
- The desired balance between basic general education and specialized education in the program for gifted and talented students should determine the selection of content and instructional strategies.

- Various gifts and talents emerge, can be identified, and can be nurtured at different developmental levels.
- Gifted and talented students need access to a variety of "teachers"—instructors, mentors, counselors, and role models.
- Programs for the gifted and talented must be viewed as an integral part of an ongoing educational program of the school system and not as an appendage or a luxury. (Passow, 1979, pp. 447-451)

Harry's words and wisdom offered us guidance in designing and developing programs when they were published almost two decades ago, and they continue to hold promise for the vision of what could or should be. Fortunately, in many schools around the world, these generalizations and principles are practiced regularly because they represent the best of educational research and practice. Harry knew and understood the educational milieu of advantaged and disadvantaged students in urban, suburban, and rural environments. His first-hand knowledge of schools and his communications with educators paid off tenfold as he wove his visions for schools into his many writings.

We were honored to have Harry collaborate with The National Research Center on the Gifted and Talented on several monographs. He called us one day to talk about a policy study. He collected legislative and regulatory documents, as well as resource books, from 49 states and reviewed them for explicit and implicit policy statements regarding the education of gifted and talented children. He wanted to know if we were interested in publishing a summary of his study. We were thrilled with his request because we knew the quality of his review process and recognized how valuable such a document would be to practitioners and legislators. Harry, as the lead author, presented us with a research study on *State Policies Regarding Education of the Gifted as Reflected in Legislation and Regulation* (1993), highlighting critical elements of program planning such as:

- philosophy or rationale;
- definitions of gifted and talented;
- identification procedures;
- differentiated curriculum and instruction;
- counseling and support services; and
- program evaluation.

Harry continued his collaborative work with the NRC/GT by co-authoring monographs that present historical, philosophical, and contemporary perspectives on two major issues in the field: identification and assessment. Dr. Mary M. Frasier and Jaime H. Garcia of the University of Georgia and Dr. A. Harry Passow produced the following monographs that will continue to influence discussions and directions in the field for decades to come:

> Frasier, M. M., & Passow, A. H. (1994). *Toward a paradigm for identifying talent potential.* Storrs, CT: University of Connecticut, The National Research Center on the Gifted and Talented.
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> Frasier, M. M., Garcia, J. H., & Passow, A. H. (1995). *A review of assessment issues in gifted education and their implications for identifying gifted minority students.* Storrs, CT: University of Connecticut, The National Research Center on the Gifted and Talented.

Harry never shied away from critical educational issues; he always approached them with the sense of an historian, the intellect of a philosopher, and the analytical skills of a researcher. In the past few years, there has been a considerable amount of discussion about grouping practices. Some people thought it was a new issue; others realized that it was cycling back into the education scene. In 1962, Harry prepared an article for *Educational Forum* (Volume 28) entitled "The Maze of the Research on Ability Grouping." He reviewed research findings and discussions dating back to the 1920s and summarized the difficulties in generalizing from the research. He noted that the problems of equating and synthesizing research findings stem from the following:

> - The studies vary considerably in scope of aim and purpose.
> - The studies differ in the number of students, the number of groups, and the size of the classes involved.
> - The studies differ in their duration—ranging from a semester or less to a year or more.
> - The studies differ in the adequacy of the selection bases and the means of matching experimental and control groups.
> - The studies differ in the "treatment"—i.e., the differentiation of curricula and methods of teaching.
> - The studies differ in the deployment of teachers in various groups.
> - The studies differ in the instruments and techniques used in evaluating changes in students.
> - The studies have generally failed to assess the effects of grouping on teachers and administrators. (Passow, 1962, pp. 285-288)

Harry's analytical approach did not involve meta-analysis, best evidence synthesis, or calculation of effect sizes. However, he certainly critiqued the research and made us realize that the issue was one of *what goes on in the group that makes the difference*—not the grouping practice. Harry recognized the importance of research and practice throughout all of his writings. As readers, we continue to come away with a sense that he really clarified the issue. What an incredible gift he has shared with all of us who keep returning to his words for future directions!

Harry's dedication to equity and excellence in schools will be witnessed for generations because of his extensive professional legacy. In an article for *Gifted Education International* (Volume 10) entitled "Families and Communities: Essential Resources for Nurturing Giftedness and Talent," he reminds us that

> The school is the catalyst for talent identification and talent development. (Passow, 1995, p. 55)

In many ways, Dr. A. Harry Passow was a catalyst for the field of gifted and talented education. With his gentle manner and incredible wisdom, he guided us for decades. His words will always be with us and our personal memories of him over the years will remain in our hearts.

A Tribute

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A. Harry Passow promulgated a gentler belief about the nature of giftedness. He stated in Essays on the Intellect, ASCD (1985):

> *What educators and psychologists recognize as giftedness in children is really potential giftedness, which denotes promise rather than fulfillment and probabilities rather than certainties about future accomplishments.*
>
> *How high these probabilities are in any given case depends on the match between a child's budding talents and the kinds of nurturance provided.*

Harry Passow believed unequivocally that what we challenge children to think about must be substance that will nurture their talent. He believed in offering children high-quality experiences to enrich their lives.

It's been said that progress comes from sticking your neck out. Standing on one or two giants' shoulders doesn't hurt, either. Harry, please let us stand on your shoulders for a while. We can think of no one who has embodied these ideals more fully. Help us experience even a fraction of the gentle humanness that was you. We will miss you, friend. Shalom!

Learning How New Teachers Relate to Academic Diversity in Mixed Ability Classrooms

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IN A BURGEONING NUMBER of classrooms around the country, heterogeneous grouping of students is the order of the day, and general classroom teachers find themselves unsure of how to adjust instruction in response to the readiness levels, interests, and learning profiles of students who differ widely in those ways. Research tells us that teach-to-the-middle instruction still prevails in our schools and that few veteran teachers are predisposed to differentiate instruction (that is, to modify what and how they teach) for students who differ significantly from the norm.

If it is the case that experienced teachers find it difficult to make changes in their practice so that they can establish classrooms with appropriately differentiated curricula, we might hypothesize that our best hope for addressing academic diversity in heterogeneous settings lies in novice teachers who may possess both state-of-the-art training and the flexibility necessary to establish classrooms with varied avenues to learning. Yet a strong body of research indicates that prospective teachers leave teacher education programs with relatively the same set of beliefs about teaching with which they entered these programs. In part, teacher education programs appear unable to reshape novice teachers' views of schooling because of the power of the images of teaching and learning that formed during the dozen or more years of schooling beginning teachers encountered prior to formal teacher education. This research calls into question the flexibility of novice teachers in breaking entrenched patterns of educational practice.

While much research exists on how novice teachers make the transition from college or university into full time teaching, little research has been done on how novices come to understand and address the needs of academically diverse learners during the earliest stages of teaching. The University of Virginia site of The National Research Center on the Gifted and Talented recently concluded a 3-year project entitled Preservice Teacher Preparation in Meeting the Needs of Diverse Learners, studying how novice teachers grow in their early attempts to think about and plan for students who are gifted, learning disabled or remedial, in the context of general classrooms.

Research Design

The Preservice Study was conducted through six university sites in four states. During the baseline phase of the study, novices received no intervention. During phase two of the study, one group of novices participated in a day-long problem solving workshop focused on helping participants think about and plan for learning needs of academically diverse learners. A second group of phase two novices took part in the same workshop and were then assigned a curriculum coach whose role was to continue to mentor their thinking about responding to academic diversity in their classrooms throughout their student-teaching placements. In the third phase of the study, a few novices from all three groups (no intervention, workshop, and workshop plus coach) were followed into their first year of full-time teaching. The study used both qualitative and quantitative design. All participants were observed at least three times during a given phase and interviewed after each observation. In addition, the novices and their cooperating teachers completed pre and post student-teaching surveys designed to assess their beliefs and practices related to academic diversity.

Key Findings From the Preservice Study

Findings from the study yielded a wide array of insights and implications for teacher educators as well as for public school leaders. Among many findings that merit consideration are the following:

- Novices in all three groups reported that they received little encouragement to differentiate instruction for academically diverse learners from their teacher education programs, university supervisors, or cooperating teachers. While the novices typically took a survey course on exceptional learners, they most often recalled the course to be an-exceptionality-a-week with little practical value in the field. Cooperating teachers often cautioned the novices to be sure to "keep all of the students together," even when the novices proposed more instructionally responsive plans.
- The novices' images of schooling were ill-suited to differentiating instruction. As they saw it, curriculum was about coverage with teachers telling and students absorbing and repeating information that is largely factual in nature. Everyone was allotted the same amount of time to complete

the same tasks. Assessment came at the end of learning to "see who got it." Grading was according to a standardized yardstick.

- Images of advanced or gifted learners and struggling or learning disabled/remedial learners were limited and limiting, and were often intertwined with compliance. Asked to describe advanced and struggling learners, the novices noted that gifted learners "do what I ask them to do" and "do it happily." Struggling learners misbehave, "can't stay on task," "don't want to work."
- The novices appeared to have a shallow well of instructional strategies from which to draw. Lecture and worksheets dominated. Even in the early grades, it was common for all learners to complete the same activities or learning centers.
- The single "alternative" instructional strategy common across many of the novices and sites was cooperative learning. The preservice teachers often spoke about cooperative learning in ways that clearly delineated the academic haves from the academic have nots, referring frequently to the students who "cannot learn" but who can at least be aided by the students "who already know it." A number of the novices discussed the benefits and relief they felt in having "junior teachers" to help them with their role as instructor.
- In the framework of overwhelming standardization in their images of schooling as well as in the realities of the classroom, the novices were frustrated by advanced and struggling learners. Gifted learners already know what is to be covered prior to instruction, "but they can't sit still, so I have to find fillers for them." Struggling learners "can't get it" in the time allotted, "but at least I expose them to it." There was a virtual absence of images of teaching in which there was more than a single "content," more than a single time allotment, or more than a single assessment, regardless of the diversity of the student population.
- Novices in the intervention groups persisted in their beliefs that learners vary in need and that an effective teacher will modify instruction based on those varying needs. Non-intervention novices, on the other hand, quickly jettisoned differentiation as a goal, often noting that it was unrealistic. Intervention novices also made more attempts to differentiate instruction than did their non intervention counterparts.

Some Implications From the Study's Findings

The role of a novice teacher is complex and demanding. In the virtual absence of either images of differentiated classrooms or persistent encouragement to develop the skills of differentiation, it was easy for the novice teachers in this study to succumb to the standardizing effects of schools. If we want to encourage novice teachers to move away from one-size-fits-all teaching, this study suggests that we will need to do a better job than we are currently doing, both at the university and public school level.

- Teacher education programs need to make differentiated instruction a key component of all pedagogical and practical experiences for all prospective teachers.
- Teacher education programs need to ensure that prospective teachers are developing the "gross motor skills" of teaching (e.g., understanding key concepts of a discipline, developing tasks that foster student meaning-making, teacher as facilitator, on-going assessment of student understanding, reflective practice) that are most likely later to lead to the "fine motor skills" of differentiation (e.g., creating tasks at varied levels of complexity, managing multiple groups in a classroom).
- Teacher education programs need to coach cooperating teachers in how to differentiate instruction (or at least the need to do so), so that the experienced teachers facilitate (or are at least open to) modifying instruction in ways responsive to academically diverse populations.
- Public schools need to establish for novices (and other staff) a core expectation that teachers appropriately address varied readiness levels, interests, and learning profiles in mixed ability classrooms.
- School leaders need to provide for novices in-school models of and coaching in creating and applying differentiated curricula, establishing and managing differentiated classrooms, flexible time use, alternative assessment, and grading patterns that support individual growth.
- Public schools need to provide novice teachers help in establishing reasonable long and short term goals for professional growth, consistent encouragement and support in achieving the goals, and recognition of growth throughout the early stages of teacher development.

The Preservice Study indicates that if the needs of academically diverse learners, including the gifted, are to be met in the regular classroom, much work needs to be done with preservice level teachers. We must establish a sense of need for teachers to be responsive to varied learner needs, perceptions and practices related to curriculum and instruction. This, of course, will require prolonged support and commitment at the university and school levels for long-term development in differentiation.

Total School Cluster Grouping: An Investigation of Achievement and Identification of Elementary School Students

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CLUSTER GROUPING OF students for instructional purposes is a programming strategy that can be used to meet the needs of high achieving and gifted students in the regular classroom. It has gained popularity in recent years due to heterogeneous grouping policies and financial cutbacks that have eliminated special programs for gifted and talented students (Purcell, 1994). Cluster grouping has been defined as the intentional placement of a group of high achieving or gifted students in an otherwise heterogeneous classroom with a teacher who has both the background and willingness to provide appropriate challenges for these students (McInerney, 1983). Research indicates three major benefits exist to cluster grouping. First, gifted students interact with their intellectual peers as recommended by Rogers (1991), as well as their age peers on a regular basis. Second, cluster grouping provides services for gifted students without additional cost to the school district. Third, recent research has demonstrated that cluster grouping facilitates ongoing programming for gifted or high achieving students in the regular classroom (Hoover, Sayler, & Feldhusen, 1993).

This study examined the effects of a cluster grouping program on the identification and achievement on students in a small, rural, mid-western school district that was purposefully selected because of its innovative use of cluster grouping. Cluster grouping in this district begins in grade 3 and continues through grade 5, with a yearly, flexible identification process beginning at the end of second grade that includes information from teachers, parents, and achievement tests. Within this program, some students are identified on the basis of their academic achievement and performance as *high achieving*, and placed together in a classroom with a teacher who modifies curriculum and instruction to meet the academic needs of these students. Other students are identified as *above average, average, low average, low*, or *special education* for placement in heterogeneous classrooms, in which students are flexibly grouped and regrouped for instructional purposes. There are five classrooms per grade level and each year one classroom has the cluster of high achieving students, with the remainder of this class comprised of average, low average, and low achieving students. The other four classrooms each have a heterogeneous mix of students who achieve at above average, average, low average, and low levels. Additionally, two of these classrooms have clusters of special needs students who receive Title 1 assistance in math and reading, or who receive assistance from a special education teacher-consultant. By arranging classes in this manner, each heterogeneous classroom has a group of above average achieving students, and the use of resource personnel is maximized.

Background of the Study

General Background

Several analyses of studies regarding ability grouping in elementary schools (Kulik, 1992; Kulik & Kulik, 1984, 1985, 1992; Rogers, 1991; Slavin, 1987) have been completed; however, only six studies could be located that examined the effects of ability grouping on gifted students in schools that used a cluster grouping model (Hoover et al., 1993; Ivey, 1965; LaRose, 1986; Long, 1957; Simpson & Martinson, 1961; Ziehl, 1962). All of these studies were concerned with the effects of cluster grouping on gifted students, and none examined the effects on students of other achievement levels. Additionally four of these studies are over 30 years old and may not apply to current educational settings. Cluster grouping is commonly suggested as a programming option for gifted students (Balzer & Siewert, 1990; Brown, Archambault, Zhang, & Westberg, 1994; Davis & Rimm, 1985; Kulik & Kulik, 1991; LaRose, 1986; McInerney, 1983; New York State Dept. of Education, 1982; Renzulli, 1994; Rogers, 1991; Winebrenner & Delvin, 1991) when, in fact, very little evidence exists regarding its impact on these students, and no existing research examines the impact of cluster grouping on all students (Hoover et al., 1993). It is surprising that since so many professionals advocate the use of cluster grouping, so little research actually exists regarding its effectiveness. A need clearly exists for empirical and qualitative evidence concerning the effects of cluster grouping, not only on high achieving students, but on other students as well.

Rationale for Cluster Grouping

The rationale for the total school cluster grouping used by the school that this study investigated is based upon the following issues discussed in the literature:

- *The program is cost effective.* Cluster grouping often exists in schools which can not afford additional personnel for a gifted and talented program. Hoover et al. (1993), LaRose (1986), Rogers (1991), Rogers and Span (1993), and Winebrenner and Delvin (1991) suggested that cluster grouping can be a solution when other programs are not affordable.

- *Students are clustered with their intellectual peers.* Rogers (1991) concluded, in her meta-analysis, that gifted students should spend the majority of their school day with students of similar abilities. Research by Schunk (1987) has shown that students learn from those who are like themselves in ability. Kulik and Kulik (1991) concluded that it is beneficial, with respect to achievement gains, for gifted students to be grouped together.
- *Special needs students and the highest achieving students are placed with teachers who have had training and are interested in meeting these special needs.* Kulik and Kulik (1984) noted that the greatest benefit for ability grouped gifted children occurred when there was curricular differentiation. Rogers (1991) noted that without training and commitment to providing appropriately challenging curricula, achievement gains would probably be insignificant.
- *The highest achieving students are removed from other classrooms, thereby allowing new leaders and achievers to emerge.* Kennedy (1989) studied the effects of gifted pull-out programs on the students who remained in the regular classroom, and found that achievement increased in the classroom when the gifted students were pulled-out for programming. Contrary to Oakes' (1985) assertion that grouping harmed lower ability students, Kulik and Kulik (1992) and Rogers (1991) found no such evidence.
- *Heterogeneous grouping is maintained while there is a deliberate reduction in the range of achievement levels that each teacher must teach.* In this program, grouping within the classrooms was flexible as recommended by Renzulli (1994) and Slavin (1987). Students interacted with both intellectual and age peers on a continual basis, identification categories were used for placement, and teachers had a limited range of achievement levels in their classrooms.
- *More efficient use of special education and Title I personnel is achieved by creating clusters of these students in one or two rooms instead of spreading them across five rooms.* This allowed team teaching between teacher consultants, aides, and classroom teachers, while providing targeted students with more time with specialists.
- *A high achieving group of students exists in every teacher's classroom.* Kennedy (1989) found that low and average ability students flourish when gifted students are not present and leading the competition in the regular classroom and Schunk (1987) indicated average and low ability students use children of similar ability as models instead of high ability children. By placing the highest achievers in a single room and above average students in the other classrooms, all students had the opportunity to grow.
- *High expectations for all students are maintained across all classrooms.* In her meta-analysis of research related to teacher expectations, Smith (1980) found that teacher expectations were linked to student learning, attitudes, and achievement. In addition, Brophy and Good's (1970) self-fulfilling prophecy model explained that students who are expected to achieve at high levels will do so, and conversely, students who are expected to achieve at low levels will not achieve at high levels.

Research Questions

Since 1988 when a cluster grouping program was implemented in the treatment school, a trend regarding the identification of students was observed by the program coordinator, district administrators, and teachers. Specifically, during the 3 years that students spent in the school cluster grouping program, more students were identified by teachers as high achieving or above average and fewer students were identified as low or low average. This trend, together with the paucity of research on cluster grouping, lead to the following research questions:

1. Does a cluster grouping program affect teacher perceptions of student achievement as measured by teacher identification categories?
2. How do students in the cluster grouping school compare with students from a similar school who are not involved in cluster grouping with regard to achievement?

Methods and Procedures

Research Design and Sample

This study employed an ex post facto examination of quasi-experimental, non-equivalent comparison group intervention which used a purposive sample. The treatment sample included all students from the Class of 2000 (N=96) and Class of 2001 (N=104) from a small rural school district. These students were involved in the program from grades 2 through 5 that allowed for an examination of the program effects over time. A comparison school was selected on the basis of its similarity to the treatment school with regard to: geographic region, socioeconomic status, ethnicity, and school configuration and size. The

(continued on page 10)

(continued from page 9)

comparison district did not have a program for gifted students, and made available for research student achievement data [Class of 2000 (N=68); Class of 2001 (N=69)].

Instrumentation

Student achievement in the treatment school was measured on a yearly basis using the *Iowa Tests of Basic Skills* (*ITBS*). The *ITBS* is a nationally recognized achievement assessment of the highest quality. For Form G, internal consistency and reliability coefficients are in the expected range of mid .80's to low .90's and stability reliabilities with a one year interval are in the .70 to .90 range (Willson, 1989).

The comparison school measured student achievement on a yearly basis using the *California Achievement Test* (*CAT*). The *CAT* is well constructed, current, and well documented with internal consistency reliabilities in the high .80's and low .90's and stability reliabilities in the .80 to .95 range (Airasian, 1989). Additionally, Airasian stated the *CAT* "compares very favorably to other achievement batteries of its genre such as. . .the *Iowa Tests of Basic Skills*" (p. 128). Thus, while the content of these two standardized tests is not identical, use of Normal Curve Equivalent (NCE) scores provided an achievement standing relative to the respective test's norm in a group.

Data Analysis

Data were analyzed using descriptive statistics (means, frequencies, and percents) and repeated measure analyses of covariance using grade 2 as the covariate to equate the groups for initial differences.

Results

To address research question one, data were collected on the yearly student identification categories (*high achieving, above average, average, low average, low,* or *special education).* During the three program years, 48% of the students from the Class of 2000 and 33% of the students from the Class of 2001 were identified as achieving at increased levels. The types of changes in identification categories are indicated in Table 1 and Table 2.

Table 1
*Class of 2000: Changes in Identification Categories Over Three Program Years**

Identification Change	Percentage of Students
Category increased	48
Category decreased	2
No change (regular education)	31
No change (special education)	9
Other changes (high-low-high, or low-high-low)	9
Total	99

Note. N=96, total may not equal 100% due to rounding.
*Categories were: *high achieving, above average, average, low average, low,* or *special education*

Table 2
*Class of 2001: Changes in Identification Categories Over Three Program Years**

Identification Change	Percentage of Students
Category increased	33
Category decreased	9
No change (regular education)	42
No change (special education)	6
Other changes (high-low-high, or low-high-low)	11
Total	101

Note. N=104, total may not equal 100% due to rounding.
*Categories were: *high achieving, above average, average, low average, low,* or *special education*

Additionally, the number of students identified as *high achieving* increased each year. For the Class of 2000, there were 10 third grade students identified as *high achieving,* but 23 students were identified as *high achieving* when they were in fifth grade. Further, for the Class of 2001, the number of students identified as *high achieving* grew from 15 to 23 between grades 3 and 5. For both of these classes of students, the number of students identified as *low* or *low average* decreased during the 3 program years.

To address research question two, the achievement scores from students who attended the treatment school were compared with achievement data from students who attended the comparison school. The NCE scores for each student on the total battery (*ITBS*: treatment; *CAT*: comparison) were used in two repeated measures analyses of covariance, one for the Class of 2000 and one for the Class of 2001. Students were statistically equated on achievement using the grade 2 scores as the covariate (significant covariate at $p<.05$). Adjusted and unadjusted means are displayed in Table 3. The results indicated that there were significant interactions between group and total battery NCE scores for the Class of 2000 ($F=(2,304)$, $p<.01$) and for the Class of 2001 ($F=(2,334)$, $p<.01$). Effect Sizes of .14 and .10, respectively, indicated that the results are practically significant (Cohen, 1985). Interaction plots of adjusted means are depicted in Figures 1 and 2.

Table 3
Unadjusted and Adjusted Means for NCE Total Scores Grades 3 through 5 for the Class of 2000 and Class of 2001

	Class of 2000				Class of 2001			
Grade	Treatment		Comparison		Treatment		Comparison	
	UnadjM	AdjM	UnadjM	AdjM	UnadjM	AdjM	UnadjM	AdjM
3	49.9	52.5	53.6	50.3	46.7	47.1	52.9	52.3
4	51.2	54.2	51.4	48.1	50.4	50.7	50.9	50.3
5	54.3	57.0	47.4	43.8	52.4	52.8	49.3	48.8

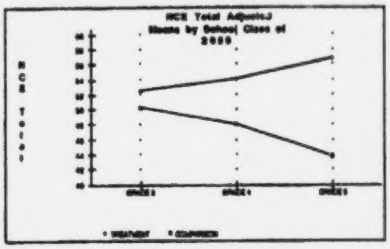

Figure 1. Interaction of NCE total scores by school for the Class of 2000.

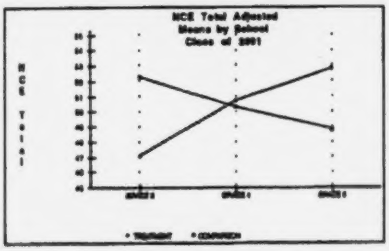

Figure 2. Interaction of NCE total scores by school for the Class of 2001.

Discussion

During the 3 years that students were involved in the cluster grouping program, their achievement increased significantly when compared to similar students from a school that did not use cluster grouping. Additionally, during each of the 3 years of the program, more students were identified by teachers as high achieving, indicating that not only were achievement scores increasing, but that teachers were identifying students who were not initially recognized as high achieving. This may be due to the fact that high achieving students were clustered in one classroom, thereby allowing students in other classrooms to be recognized as high achieving. It is encouraging that not only did the identification categories of many students increase during the 3 program years, but that this was followed by an overall increase in achievement as measured by the *Iowa Tests of Basic Skills*.

The implications are that when a cluster grouping model is implemented, there may be a positive effect on the achievement and identification of all students, not just those identified and placed in the cluster for high ability students. According to the model in the treatment school and the review of literature, this is most likely when teachers have training in tailoring curriculum and instruction to the individual needs of students and when teacher expectations are high for all students.

This study provides a basis for further, controlled research regarding the effects of cluster grouping on the achievement and identification of students. A follow-up investigation will be conducted into the classroom practices of the teachers involved in this program.

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Valuing, Identifying, Cultivating, and Rewarding Talents of Students From Special Populations

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IN OUR SOCIETY, WHICH IS far from uniform in its beliefs and values, reaching consensus regarding who is gifted is complicated, and identifying potentially gifted students can be ambiguous at best. The differences in cultural norms, languages, ethnic backgrounds, levels of education and income, and other differences, raise a number of issues with respect to what talents are valued, identified, cultivated, and rewarded.

The challenges of identifying gifted students from underrepresented or special populations is not new. For decades, issues were raised concerning the identification of gifted children from lower socioeconomic classes. Since World War II and especially since school desegregation, there has been a recognition that the traditional approaches to identifying gifted children have been inadequate and that the considerable talent potential among minority and economically disadvantaged students has gone undeveloped (Frasier, Garcia, & Passow, 1995). Gifted children with disabling conditions are also underserved and underrepresented in gifted and talented programs (Willard-Holt, 1994). Therefore, identifying and serving gifted students from racial and ethnic minority groups, economically disadvantaged students, students with limited English proficiency, and students with disabilities is a priority in the Javits Gifted and Talented Students Education Act of 1988.

This section focuses on the reasons for the underrepresentation of students from special populations in gifted and talented programs and the proposals to deal with improving this problem.

Cultural and Ethnic Groups

People who live in the inner city, in the barrio, or on the reservation need to know that their children are gifted. There's too much raw ability going through the cracks. If a child we might lose had the ability to cure cancer but ends up joining a gang or dealing dope, that's a double loss to the country. (Ryan, 1983)

Over the years, numerous writers have observed that gifted children can be found in every level of society and in every cultural and ethnic group (Clark, 1993; Ford, 1994; Renzulli, 1973; Torrance, 1977). Yet, identification of students with learning or physical disabilities and those from different cultural and ethnic groups has not been in balance with their numbers in the school population.

By far, underrepresentation of cultural and ethnic participation in programs for the gifted is most frequently attributed to biases in standardized testing (Bernal, 1980; Richert, 1987, 1991). Charges of test bias may stem from the test's content and format, performance differences among groups, and the purposes for which the test results are used. However, there is some agreement (Anastasi, 1988; Kamphaus, 1993; Reynolds & Kaiser, 1990; Thorndike & Lohman, 1990) that there is little or no substantiating evidence in the claims of bias in most well-constructed modern tests of intelligence.

Charges of bias extend beyond the test's content and format. A number of others criticize the fact that testing instruments and practices developed in Euro-American tradition are invalid measures for other minority group children (Boykin, 1986; Hilliard, 1991). In any event, discussions and disagreements about test bias will continue as long as standardized tests remain a dominant part of assessment and identification.

Another area of concern regarding assessment and identification of children from cultural and ethnic groups is in the referral process. It has long been recognized that minority students are simply not referred for programs for the gifted to the same extent as majority students. Factors contributing to the underreferral of these students are teacher attitude and the type of school these students are likely to attend (High & Udall, 1983). Research indicates that students, teachers, and school professionals continue to have low academic expectations for culturally and linguistically diverse students (Jones, 1988). With low expectations, teachers tend to overlook these students when making referrals for gifted program screening.

The traditional focus on deficiencies rather than on strengths is another reason for the low participation of students from cultural and ethnic groups in gifted programs. Since the 1950s and 1960s, with the emergence of school desegregation, civil rights activities, and the war on poverty, cultural deprivation became the driving theme for research. Identifying the knowledge, skill, and attitude deficiencies of ethnic students, and designing activities to eliminate or reduce them became the main focal points. This focus has made it difficult to recognize the strengths of these children, and has been criticized because it has diverted attention away from students who have achieved, despite the characteristics of cultural differences (Frasier, Garcia, & Passow, 1995).

Physical and Learning Disabilities

A major portion of their time is often spent in remediation or learning to circumvent the effects of the disability. This concentration on the child's disability may preclude the recognition and development of cognitive abilities. (Karnes & Johnson, 1991)

Identification of students with specific physical disabilities can be problematic. Children whose speech and language are impaired cannot respond to tests requiring verbal responses. Children with limited mobility may be unable to take nonverbal or "performance" tests requiring hand manipulation. In addition, limited life experiences due to impaired mobility may artificially lower scores. Another problem is that gifted children try to compensate for their weaknesses, and children with disabilities often hide special abilities in order to fit in. This combination may cause them to appear closer to average in both areas (Hemmings, 1985), and be overlooked for placement in gifted programs.

Problems inherent in the identification of gifted students with learning disabilities can be grouped into four categories (Whitmore & Maker, 1985). The first has to do with stereotypical expectations about gifted children. Although most of the old images of the gifted child as a weakling wearing thick glasses are gone, stereotypes remain, such as, the gifted are always mature, self-directed, and well behaved in the regular classroom. The second category includes developmental delays. Some disabling conditions can produce delays in specific developmental abilities that are often used as indicators of giftedness. While developmental delays may hinder intellectual aptitude, they are not necessarily indicators of cognitive inability.

The third obstacle to identification includes incomplete information about the child which limits the view of the child's potential. Educators are usually not provided with detailed information about the characteristics of high ability students with learning disabilities. This may cause the classroom teacher to concentrate on disruptive behaviors and learning deficits instead of the child's talents (Cramond, 1995; Reis, Neu, & McGuire, 1995).

The last category of obstacles to identification relates to existing programs for students with learning disabilities. In programs for children with learning disabilities, students are rarely provided with opportunities to display their talents. There is little information about enrichment programming for bright students with learning disabilities.

The problem of identification is further compounded by the absence of procedures to locate these students within most public schools. The identification of high ability students with learning disabilities is a rarity in school professional development programs, therefore, there is a general lack of awareness regarding the phenomenon of gifted students with learning disabilities (Boodoo, Bradley, Frontera, Pitts, & Wright, 1989).

Assessment and Identification Issues

Cultural and Ethnic Groups

The use of multiple criteria and nontraditional measures figures prominently in many of the proposals to improve the identification and consequent representation of gifted students from minority populations. (Frasier, Garcia, & Passow, 1995)

Assessment issues related to the identification of gifted children from different cultural and ethnic groups highlight the difficulties with traditional methods in recognizing the talents of students from diverse groups (Callahan & McIntire, 1994). Various researchers have offered a range of possible ways of increasing effective identification procedures. They include: developing new data matrices; renorming or redesigning standardized tests; creating more authentic evaluation procedures such as portfolios or performance assessment; using objective and subjective data from multiple sources; extending the range of persons in the referral and nomination process, which involves creating enriched learning opportunities so students can demonstrate their abilities; adjusting cutoff scores and analyzing subtest scores differently; and developing culture-specific checklists and rating scales (Frasier, Garcia, & Passow, 1995; Lidz, 1991).

There are many difficulties inherent in these proposals. There are claims that some of these nontraditional, nondiscriminatory forms of assessment may actually provide invalid information (Hilliard, 1991). Others argue that "doctoring" measurement techniques by adding points stigmatizes these children, while failing to recognize their many gifts (Bernal, 1980). Lastly, summing scores from different tests, scales, and checklists is considered statistically inappropriate (Pendarvis, Howley, & Howley, 1990).

The long-standing debates related to the identification of talent potential among this population will, no doubt, continue for some time. There is no single new assessment procedure that will fix all the problems associated with assessment and identification of these children. Among the areas that research can profitably address are in the development of a consensus on the construct of giftedness and in the exploration of the value and validity of data from multiple sources.

Clearly, new models for identification that will include populations that have not been adequately identified are needed (Frasier & Passow, 1994). The promise is that educators will better

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understand how to identify and nurture talent potential among all learners.

Students With Physical and Learning Disabilities

Intellectually gifted individuals with specific learning disabilities are the most misjudged, misunderstood, and neglected segment of the student population and the community. (Whitmore & Maker, 1995)

There are three areas educators can address which relate to recognizing talent in students with physical and learning disabilities. They include: the difficulty in expressing and recognizing talent, the impact of the classroom atmosphere, and integration into the regular classroom (Cramond, 1995; Reis, Neu, & McGuire, 1995; Willard-Holt, 1994). First, there are a variety of measures which may be used to assess the cognitive abilities of students with physical limitations. Standardized tests include the *Columbia Maturity Test*, *Detroit Test of Learning Aptitude-2*, and the *Stanford-Binet*—to name just a few. Certain adaptations and modifications may be necessary, not to make the test easier, but to make it possible for students to demonstrate their abilities.

The difficulty in recognizing indicators of giftedness may be reduced with informal measures such as observational checklists of characteristics of gifted children and those specific to gifted students with various disabilities. Recognizing and nurturing talents in children who are unable to speak is extremely difficult. These children cannot explain their thinking processes, respond to or ask questions, or display leadership abilities in conventional ways. They must rely on others or on mechanical devices to interpret for them.

The second area of focus involves the classroom. The classroom atmosphere, its structure, and the instructional activities offered greatly impact the intellectual development of gifted students with physical disabilities. A positive atmosphere, where students with physical abilities are respected, facilitates their development. Classes that are structured for individualization, advanced work, and an emphasis on achievement tend to be the best suited for these students. Hands-on activities such as science experiments and field trips are valuable in building tactile experiences not often encountered by students with physical disabilities.

The last area involves integration into the regular classroom. Gifted students with physical disabilities need a

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mainstreamed setting with opportunities to interact with nondisabled peers. Spending more time with nondisabled students helps them to learn adaptive behaviors more quickly. They also should be given access to gifted programs in their schools.

In addition, there are various measures to enhance the identification of students with specific learning disabilities other than those which are physical. A substantial amount has been published about various traits or characteristics which hamper the identification of high ability students with learning disabilities. Practitioners interested in this population have also identified positive characteristics which can aid educators and parents in recognizing the talents of these students (Reis, Neu, & McGuire, 1995).

These lists of characteristics may help rid the stereotypes which still remain about the gifted child, and allow educators to look beyond disruptive behaviors and learning deficits, toward the talents the child may have. In order to do this, however, professional development programs are imperative for classroom teachers who often find it difficult to recognize giftedness in one area when the same student is having difficulties in other areas.

Finally, instructional strategies which avoid drill and practice, but provide special enrichment activities which develop creative abilities are a few of the many recommendations offered by experts interested in high ability students with learning disabilities. These recommendations are consistent with the overall recommendations offered by experts in the field of gifted and talented education (Baum, 1984). The key to addressing students with disabilities lies in getting beyond the specific disability while allowing the cognitive talents to blossom.

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NRC/GT: The Parent Connection

E. Jean Gubbins
University of Connecticut
Storrs, CT

For the past seven years The National Research Center on the Gifted and Talented (NRC/GT) has conducted theory-driven, practitioner-oriented research focusing on identification and programming for high ability students. Our mission guides us in designing studies that ultimately affect future policies and procedures in gifted and talented education. As resulting data become available, practitioners incorporate findings to ensure appropriate and challenging programs and services for students. They access our data in print, videotape, and electronic formats and make decisions about how to improve or extend practices.

In all phases of our research, practitioners play a central role. They serve as research liaisons in schools throughout the country, evaluate potential instruments and assessment tools, review drafts of monographs, and share our information with others. They often operate under the "Did you know?" approach to professional development. At meetings, conferences, workshops, or in corridors, practitioners spread the word about the NRC/GT. We appreciate all of these "town criers of NRC/GT research" because we want our findings to reach people who can make positive changes in schools.

Another role for practitioners evolved over time—sharing research findings with parents. We incorporated specific information for parents in monographs. For example, in *Reading With Young Children* (Jackson & Roller, 1993), a letter to practitioners invites them to share information with parents. In each self-contained section of the report, the authors respond to frequently asked questions about precocious readers, assessment strategies, and writing skills. Questions are posed, responses are provided to inform and guide practitioners and parents, and references and resources are added to support the statements. One frequently asked question is:

> **Will precocious readers continue to be exceptionally good readers?**
>
> Precocious readers almost always remain at least average in their reading ability and most stay well above average, even though their reading performance in fifth or sixth grade is much more likely to be within the range of their classmates' performance than it was in kindergarten. . . . Some investigators have claimed that precocious

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> readers remain superior in reading achievement throughout their elementary school years, relative to other children of comparable intelligence who were not early readers. . . . However, the meaning of these findings is hard to evaluate. Does an early start in reading in itself give a child a lasting advantage, or do other factors, such as persistence, interest in learning, or parental support, contribute both to the early emergence of reading and to continued good achievement? (p. 37)

Other documents focus on dual audiences—educators and parents. Practitioners' Guides on *What Educators and Parents Need to Know About Elementary School Programs in Gifted Education* and *What Educators and Parents Need to Know About Fostering Creativity* present specific information and research facts that can be reviewed in minutes. Complex quantitative and qualitative research findings are distilled into essential research facts:

> **What Educators and Parents Need to Know About Elementary School Programs in Gifted Education**
>
> Children in programs for the gifted obtain higher achievement scores than their gifted peers who are not in such programs.
>
> Successful programs challenge students through high level content and pacing of the curriculum, while providing many opportunities for these students to make their own choices and to have control over their learning environment. (Delcourt, 1995)

Other times research-based information illustrates how to foster the talents of all children:

> **What Educators and Parents Need to Know About Fostering Creativity**
>
> Provide environments that stimulate and encourage creative ideas. Reward a broad range of creative behaviors.
>
> Be a mentor to a child who displays interest in your particular domain or field of expertise.
>
> Teach students creativity enhancement techniques (e.g., SCAMPER [acronym for Substitute, Change, Adapt or Adopt, Magnify or Minify, Put to other uses, Elaborate, and Rearrange], brainstorming, synectics, attribute listing) to use with their science fair projects, art activities, and writing assignments to design a more creative product.
>
> Expose your child to various types of tasks and activities, emphasizing variety in music, family and/or field trips, TV viewing, reading material, hobbies, toys, etc. (Plucker, 1995)

Still other times, research-based documents serve as guides for parents of young children. In *Parenting the Very Young, Gifted Child,* Robinson (1993) discusses perfectionism.

> Young gifted children have frequently been described in individual case studies as perfectionistic, that is, self-critical, setting high standards for their own performance, and monitoring their attainment according to what others think. . . . What is good and necessary for ultimate high achievement—setting high but attainable goals for oneself—can be either a positive or negative force. A delight in mastering challenging tasks may well be the secret of success, and this quality in the very young is predictive of later high ability. . . . (p. 6)

Alvino (1995) fills a book with ideas: *Considerations and Strategies for Parenting the Gifted Child.* Topics include: Parenting Styles Make a Difference; The Enriched Environment; Nurturing Your Child's Creativity; Critical Thinking, Research, and Study Skills; Academics at Home: The Core Subjects; The Value of Play. To enhance the joy and challenge of parenting a gifted child, Alvino advises:

> Remember to temper overbearing personality traits. Focus on the positive aspects of your child's behavior; don't place unfair burdens on your child just because he or she is gifted; allow for unstructured time and self-initiated play; and balance permissiveness with authority as a loving, caring adult.
>
> Balance "being on task" activities with relaxation and lots of free time. Let your child's interests guide your involvement. Give appropriate praise that is specific, focuses on the desired behavior (not the child), and celebrates accomplishments for their own sake. Be a guide and matchmaker between your child's interests, talents, and the means and opportunities to explore them. (pp. 77-78)

From providing data on traits and behaviors of gifted children to developing guides for parents, our documents feature critical information to help children. Of course, parents are their children's first teachers and they exert a strong influence on their aspirations and future roles. Hine (1994; 1995) summarizes her research findings in English and Spanish: *Helping Your Child Find Success at School: A Guide for Hispanic Parents, Cómo Ayudar a su Hijo a Tener Éxito en la Escuela: Guía para Padres Hispanos.* Hine conducted a qualitative study of 10 Puerto Rican high school students and their parents to ascertain: What factors in the family learning environments of gifted Puerto Rican high school students support high achievement? Major keys to open the doors to success at school included:

> **Key #3:** Parents must make their children understand that they believe their children will be successful both in school and, later, in the workplace.
>
> Parents of high achievers had high educational and occupational aspirations for their children. They let their children know they expected them to do well in school and to gain the knowledge and skills necessary for a good occupation. Parents stressed the importance of getting a good education to reach these goals. They often mentioned their own employment and personal aspirations which served as a role model for their children. (p. 12)
>
> **Key #8:** Parents should become involved in their child's school and extracurricular activities. By encouraging a "social bond" with the school and the community, they will help him or her to grow in confidence and self-esteem.
>
> All of these high achieving students were actively involved in both school and extracurricular activities, and their parents encouraged and supported this involvement. Being "involved" helped them develop a positive self image and a sense of commitment to school and community. (p. 20)

One traditional marker of success is to continue one's education beyond high school. Children may or may not be familiar with all the prerequisite tasks necessary for pursuing a college education, especially if they are first generation college attendees. They need advice about the realities and timing of the whole process, and they and their parents can find it in a book by Wright and Olszewski-Kubilius (1993) entitled *Helping Gifted Children and Their Families Prepare for College: A Handbook Designed to Assist Economically Disadvantaged and First-Generation College Attendees*. Once the applications are secured from potential institutions matching the children's interests and skills, letters of recommendation are requested and completed, and transcripts are secured, it is time to brainstorm potential questions to college admissions representatives:

> - What is the average class size for freshmen courses?
> - Are most undergraduate courses taught by graduate students or faculty?
> - Do you have to be accepted for admission before you are awarded financial aid?
> - On the average, how much of the actual cost of attending the school does financial aid typically cover?
> - What are some of the unique qualities about the college?
> - What academic support services are offered to students?
> - What student groups are available on campus? (p. 67)

Getting ready for college may be a long, arduous process that seems far away for some or too close for others. Students need to consider what talents, abilities, and interests they will bring to the college or university and pose questions to interviewers that present a clear picture of the organization and academic setting. Parents and children can read and review the book by Wright and Olszewski-Kubilius to gain a wealth of how-to information about pursuing college. The book was prepared as a service for parents and children and it has helped several young people realize their dreams.

Nurturing the talents, abilities, and interests of children is a continual process that brings rewards at all ages. College entrance may be regarded as a tangible reward for hard work and high aspirations; others may view college entrance as a time of reflection on a question or comment their child made at a young age that indicated potential talent. In *Parents Nurturing Math-Talented Young Children* and *Teachers Nurturing Math Talented Young Children* (Waxman, Robinson, & Mukhopadhayay, 1996a, 1996b), the authors describe a two-year study of preschool and kindergarten children involved in biweekly Saturday Clubs designed to enrich their mathematics experiences. Some of the students were "deeply passionate about numbers, as is evident in their questions, in their tendency to ignore what the rest of the class is doing while they are absorbed with a problem of their own, and in their smiles of satisfaction when they make sense of something puzzling" (p. 1). The young, math-prone students came to the attention of the researchers through nominations by teachers and parents. Parents completed application forms, recording verbatim comments such as the following that reflected their child's mathematical view of the world:

> At four years old, he could identify all the states of the US by shape alone and place them appropriately without outline clues.
>
> Has recently shown interest in written music—how notes and rests divide a measure.
>
> She and her father had a lengthy discussion on Avogadro's number, which is now called Avocado's number. She can tell time and write Roman numerals up to 20 easily.
>
> Will multiply and divide using factors up to 10 and various combinations of numbers. All this is done in his head . . . the process is what interests him. (pp. 3-4)

(continued on page 4)

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The children's inquisitiveness about all things mathematical was bolstered over time through "playing with wonderful ideas." The soon to be released books by Waxman, Robinson, and Mukhopadhayay contain numerous ideas to spur mathematical thinking and doing. Teachers and parents will find these books a wonderful resource for schools and homes. They will revel in the character profiles of the young students involved in the Saturday Clubs known as Math Trek. JoAnne is just one example:

> JoAnne hated writing. The worst parts of first grade for her were all the requests to write. Her mom was puzzled by JoAnne's dislike of writing, for she loved to read and draw. Her favorite subject, however, was math. During one of the second year Math Trek sessions, the children were asked to make a drawing and write a story that would make sense of some simple equations. One equation was 0 - 3 = -3. JoAnne loved negative numbers and was intrigued by the challenge of coming up with a plausible story. She spent a long time drawing a picture and then wrote a comical story about a man who had to dig three levels underground in order to get to a certain pipe. (1996b, p. 73)

The talents, abilities, and interests of children are visible at all ages and we hope that our research finds its way into the hands of more and more parents. Thus, we call upon the many practitioners in our network and ask that they, once again, share our work with parents. Yes, go ahead, copy this article and give it to a parent. Help us build the parent connection!

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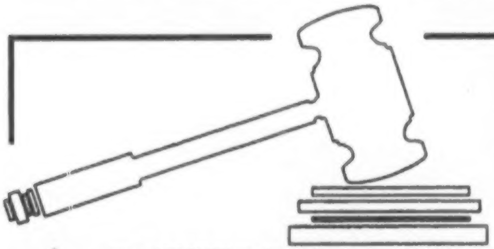

Gifted Education: It's the Law—Or Is It?

A recent NRC/GT study analyzed state policies on the identification and education of gifted and talented students. The results provide an analysis of the components or elements that comprise a comprehensive policy for identifying and nurturing talent potential. This document is a must for advocates of gifted children as they reexamine and reassess their state's policies.

State Policies Regarding Education of the Gifted as Reflected in Legislation and Regulation

by A. Harry Passow & Rose A. Rudnitski — Order No. CRS93302.....$10

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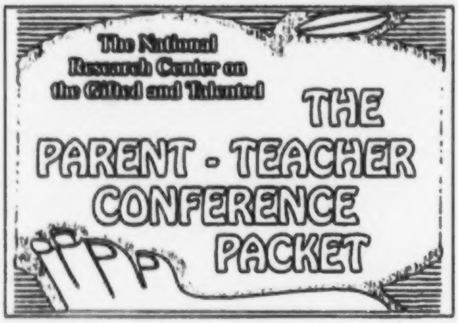
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A Parent's Guide to Helping Children: Using Bibliotherapy at Home

Mary Rizza
University of Connecticut
Storrs, CT

There were nights when it seemed impossible to get Tara into bed. It was hard to distinguish what set her off, but the outcome was always the same; getting out of bed, asking questions, wanting a glass of water, all until her mother was quite annoyed. Then, quite accidentally, Tara and her mom came up with a new bedtime routine. On those hard to get to bed nights, Tara was allowed to pick two books to be read to her. The second book was always *Goodnight Moon* by Margaret Brown. This was a book that had a calming effect for Tara and the routine of the story reading helped her get ready to go to sleep.

This is just one way for parents to incorporate bibliotherapy into the everyday interactions with children. Bibliotherapy is the use of literature that addresses problems or issues current in the lives of children. For some children like Tara, a favorite story, poem, or song can be a comfort in a trying time. Introducing a new story or book can be equally as helpful for children because it helps to clarify feelings and validate emotions. Making up their own stories or modifying a favorite also can get children to talk and think about issues at hand.

Definitions

Bibliotherapy as a technique has proven effective in both the classroom and in child therapy (Borders & Paisley, 1992; Lenkowsky, 1987). Through reading, or being read to, a story similar to their own lives, children are able to experience and deal with an issue objectively which can then be applied to their own problems/issues. The stories should show the child there is a way out, others have the same issues, you are not alone. Bibliotherapy sends the message to the child that it is acceptable to talk about this and together we can work out a solution. Hébert (1991) cautions that the simple act of reading a story is not bibliotherapy. Follow-up discussions must be incorporated in order to reinforce the issue at hand. Added outcomes of such discussion include fostering interpersonal relationships and problem solving skills. Discussions provide a forum for the child to better understand what is being said in the story and to apply it to her/his situation. It is important to note that the ramifications of this technique are greater for high ability children because of their ability to empathize, which allows them to identify with the characters, to understand metaphor, and to become absorbed in the story with a meta-understanding of the issue.

Bibliotherapy is useful because it allows the child to step back from her/his problem and experience it from an objective viewpoint. It offers the child a safe avenue to investigate feelings. For an adult having to deal with a child in distress, it can also provide a nonthreatening way to broach a sensitive subject. Always remember, bibliotherapy is a conversation starter, not ender. It should be used to open up communication. Handing a book to a child in the hopes that she/he will understand your intention is not helpful. Connections need to be facilitated and open expression should be encouraged.

Who, What, When

Who should use bibliotherapy? Anyone who has contact with a child who is experiencing emotional turmoil or confronting a new issue that is confusing can use a technique like bibliotherapy. Counselors have used this technique quite successfully since the 1950s and 1960s. Lenkowsky (1987) points to its use as a planned therapy with three components: identification, catharsis, and insight. The use of bibliotherapy in the classroom seems to have its roots in the 1970s with the use of picture books with children (Jalongo, 1983). The popular trend in children's literature to include more emotionally laden and real-life subject matter has increased the use of bibliotherapy today. The quality of available literature is outstanding. There seems to be a greater awareness of real life issues and multicultural sensitivity among book authors and publishers. Not only are bibliotherapy approaches useful within the context of a classroom or therapy session, but more and more parents are finding it beneficial in helping their children deal with the stress of modern life. Taking the time to read a story with a child, if done in an empathetic, understanding atmosphere, can reinforce a positive sense of worth and increase the parent/child bond.

Schlichter and Burke (1994) point to two forms of bibliotherapy: developmental and clinical. Clinical bibliotherapy is employed by trained personnel, for use with children in therapy situations and is just one aspect of the treatment process that deals with deep problems. Developmental bibliotherapy is used to anticipate issues before they become a problem. For instance, reading a story about a child who is frightened about going to first grade with your kindergartner is developmentally appropriate and can prove to be helpful in allaying some of their fears. This type of bibliotherapy is useful with children who are progressing through the normal stages of growing up and who may benefit from an exploration into issues relevant to their age or experiences, e.g., bedwetting, nightmares, or fights between friends. It is when the issue becomes problematic for the child and/or family that professional help is required. If you find yourself asking questions such as the following, then maybe you need to consult with a professional. "Is this an issue I feel comfortable dealing with alone? I have tried everything I know, now what do I do?" A therapist may ask you to become part of the therapy by recommending to you certain books to read at home, but this will be in addition to the work being done in the office. The most important thing to remember is that your child is getting the help with the issue before it becomes a major life trauma.

Selection

For those parents who are looking for ways to use literature with their children, there are several sources for appropriate books for and about children. Some authors include bibliographies at the end of their works (see Hébert, 1991; Kerr, 1991; Silverman, 1993). One suggestion by Silverman is to consult a librarian who in addition to her/his own expertise, can point you to the resources like *Bookfinder 5: When Kids Need Books* (Spredemann-Dreyer, 1994). This work allows you to find books by subject, author, or title and includes items for children from 2-18 years. It is a helpful resource that is continually updated but just one example of many guides available to you. It is worth the trouble to explore the shelves of local libraries and bookstores; don't be timid about asking for help.

Using annotated bibliographies and suggestions by others is a good source for ideas on materials. The best way to select a story is to read the story. It may take time to find an appropriate book for use with your child. You want it to be closely related to the issue at hand, offer suggestions for coping strategies, and include a protagonist your child can relate to. Characters in stories are either humans or animals, ask yourself which will be more appropriate for your child? Can they make the leap from an animal character to their own life, or will they see such a book as babyish? The storyline and characters do not have to match your situation exactly, but be sure there is some commonality. There are many good stories available so don't compromise. Choosing a story that a child cannot relate to will negate your good intentions. Take your time, visit libraries and bookstores. Chances are you will find many more adults in the children's section than you anticipate!

There are also more formal criterion put forth by authors regarding the selection of books. Generally, selecting quality literature is of the utmost importance (Halsted, 1988). Choose books that are well written, clearly printed, and include artwork that is both relevant to the story and pleasing to the eye. Jalongo (1983) suggests there are three advantages for using literature: information, relevance, and acceptance. These three can also be used as critera to select materials. Ask yourself if the book or story a) promotes the exchange of information between adult and child, b) enables the child to make the connection to her/his life, and finally c) validates the child's feelings and responses to the crisis or issue at hand. Any book or story that incorporates any or all of these ideas would be appropriate to use within the context of bibliotherapy.

Taking Action

Jane's dog ran off his leash and was hit by a car. Her father did not know how to explain to Jane that it was an accident and that sometimes these things happen. She was inconsolable; Riddles had been the family dog since Jane was a baby. A neighbor gave Jane a book called *The Tenth Good Thing About Barney* by Judith Viorst. Jane and her mom read this book about a little boy whose cat died. She was able to relate to how the boy in the story felt and tried to name ten good things about Riddles. Jane came up with 14 things and she and her mom drew pictures about each one. Now, whenever she feels sad about Riddles, Jane reads the book she made. Ziegler (1992) suggests that allowing the child to write his/her own story will help the healing process.

This example shows how one family dealt with the death of their pet. The bibliotherapy exercise was just one way the family helped Jane deal with Riddles' death. There were many tearfilled nights and lackluster days. Eventually, Jane got over the death of her friend, as would be expected, and the book was just one thing that helped her on her way. Immediate results cannot be expected. In fact, with some resistant children, this method will seem to fail miserably. Time is the critical factor. For some children it will take time for them to incorporate the ideas or even want to deal with the issue. Talking about emotions may be difficult and the child may be resistant but with the help from a caring adult, she/he can learn to deal with issues and not ignore them. Not attending to an issue can often lead to more problems down the line. Giving your child the space to explore issues in an open and trusting environment will further validate her/his feelings both about her/himself and you.

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Ziegler, R. G. (1992). *Homemade books to help kids cope.* New York: Magination Press.

Resources

Barrett, J. D. (1989). *Willie's not the hugging kind.* New York: HarperTrophy.

When Willie's best friend tells him hugs are silly, Willie thinks hugs are silly, too. So no one in Willie's family hugs him anymore. But Willie knows deep down, in spite of what Jo-Jo thinks, that he is the hugging kind.

• • •

Baynton, M. (1988). *Jane and the dragon.* Martinez, CA: Discovery Toys.

Jane wants to be a knight but everyone laughs at her, saying that girls can't be knights. The court jester is the only person who takes Jane seriously. He lends her a small suit of armor—which turns out to be just what she needs.

• • •

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Michael was quite simply the worst boy in school. He was always late, usually scruffy, and never did what he was told. His teachers had just about given up on him when one day they discovered that even the most hapless student can blossom.

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Brown, M. (1989). *Goodnight moon.* New York: HarperCollins.

A little bunny says goodnight to each of the familiar things in his world.

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Cohen, M. (1980). *First grade takes a test.* New York: Greenwillow Books.

The first grade is distressed by an intelligence test which fails to measure true aptitude.

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Cole, B. (1986). *Princess smartypants.* New York: G. P. Putnam's Sons.

Not wishing to marry any of her royal suitors, Princess Smartypants devises difficult tasks at which they all fail, until the multi-talented Prince Swashbuckle appears.

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Hess, D. (1994). *Wilson sat alone.* New York: Simon & Schuster.

A little boy always does everything alone and never with his classmates, until a new girl comes to school.

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Hill, E. S. (1991). *Evan's corner.* New York: Viking.

Needing a place to call his own, Evan is thrilled when his mother points out that their crowded apartment has eight corners, one for each family member.

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Jahn-Clough, L. (1994). *Alicia has a bad day.* Boston: Houghton Mifflin.

When Alicia can't seem to cheer herself up, she tries going back to bed.

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Martin, B., Jr., & Archambault, J. (1987). *Knots on a counting rope.* New York: The Trumpet Club.

A boy learns about strength by listening to his grandfather and his own inner voice.

• • •

Most, B. (1990). *The cow that went oink.* San Diego, CA: Harcourt Brace.

A cow that oinks and a pig that moos are ridiculed by the other barnyard animals until each teaches the other a new sound.

• • •

Ross, T. (1989). *I want a cat.* New York: Farrar Straus Giroux.

Jessy must be the only girl in the world without a pet. And she wants a cat. Unfortunately, her parents think cats are crawly, creepy, yowly things. But Jessy isn't going to let that stand in her way, and she comes up with a wonderful plan.

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Simon, N. (1991). *I am not a crybaby.* New York: Puffin Books.

Children describe a variety of situations that make them want to cry, emphasizing that crying is a normal reaction.

• • •

Smith, L. (1991). *Glasses, who needs 'em?* New York: Puffin Books.

A boy is unhappy about having to wear glasses, until his doctor provides an imaginative list of well-adjusted eyeglass wearers.

• • •

Viorst, J. (1972). *Alexander and the terrible, horrible, no good, very bad day.* New York: Aladdin Books.

One day when everything goes wrong for him, Alexander is consoled by the thought that other people have bad days, too.

• • •

Viorst, J. (1971). *The tenth good thing about Barney.* New York: Aladdin Books.

In an attempt to overcome his grief, a boy tries to think of the ten best things about his dead cat.

• • •

Waber, B. (1972). *Ira sleeps over.* Boston: Houghton Mifflin.

Ira has to decide whether to bring his teddy bear with him when he sleeps over at Reggie's house. His dilemma is solved by a surprising revelation.

• • •

Willis, J., & Varley, S. (1986). *The monster bed.* New York: Lothrop, Lee & Shepard Books.

A little monster is afraid to go to bed because he thinks humans will get him while he is asleep.

• • •

Zolotow, C. (1972). *William's doll.* New York: HarperTrophy.

More than anything, Williams wants a doll. "Don't be a creep," says his brother. "Sissy, sissy," chants the boy next door. Then one day someone really understands his wish, and makes it easy for others to understand, too.

The National Research Center on the Gifted and Talented Welcomes the Following New Collaborative School Districts:

Monroe Central School Corporation – Parker City, Indiana
Logan County Schools – Russellville, Kentucky
Carlsbad Municipal Schools – Carlsbad, New Mexico
Rush-Henrietta Central School District – Henrietta, New York
Pittsburgh Public Schools – Pittsburgh, Pennsylvania
Cypress-Fairbanks Independent School District – Houston, Texas
Colegio Bolivar School District—Cali, Columbia

Parents, Research, and the School Curriculum

Mallory Bagwell
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Six years ago my wife and I went through the proverbial "trading of roles" in our home. She went back to work within a full-time teaching position and I reduced the number of theatrical workshops conducted at schools around the state. Our two sons, Matthew and Nathan, were entering kindergarten and second grade respectively, and as we factored the economic advantages of the situation with our beliefs on child rearing we agreed that there should still be a consistent presence of an adult in the daily routines of our children. Breakfasts together, making lunches, greeting them at the bus stop, and general communication with the school became my domain. Accompanying this realignment of roles was a discussion on how parents nurture children at the various stages of childhood. Meal preparation, transportation, grocery shopping, etcetera were not the issues here but rather, the question, "What kind of nurturing role can a parent assume when both children are in school from 8:30-3:30?"

A child's initial entry into school causes a parent to ask him or herself, "What is it I wish my child to become?" While the child's daily absence out of the home often implies, "The school will generally do a good job of respecting your child's individuality while preparing him or her for a meaningful and productive future." Like most parents we had a general idea of what ought to occur in the academic portion of our sons' lives. As parents, we were hesitant to leave the development of this vision completely to the school. Perhaps this was because we were both teachers and realized the demands of curricular modifications upon a teacher's time; but actually it was because we, as parents, had exciting visions for our children and felt it was our moral obligation to reach for those visions. The school was viewed as a valuable resource in the process. Admittedly, as a father, I questioned the significance of my contributions to nurturing which lay beyond the domestic aspects of the process. Aware that fatherly pride can evolve to a "fast track" parenting style, I was content to witness, via a journal, my children's interests and foster them during various episodes of directed playfulness. During one such episode I discovered Matthew's (our younger son) interest in the concept of numbers. At age three he had demonstrated that a set of 14 porch balustrades always equaled 14 regardless of how many different ways they were divided. *"See Dad? They all make 14 Dad. 3+3+4+4 makes 14 Dad. So does 7+7 Dad. 1+1+1+1+10, See Dad? See? They do."*

His interest grew and so in the June before his entry into kindergarten we contacted the school, a rural, K-8 program with 104 students. There was one teacher per grade which disallowed a choice of teaching styles within any particular grade level. How do parents advocate on their child's behalf given the "home court advantage" of a singular classroom style? Our solution was to resort to our vision that said "foster the interests and strengths of our children," as interests seemed to be part of what makes learning enjoyable and strengths figured into the development of potential. We approached the school psychologist and the kindergarten teacher to draw attention to some learning behaviors and inquire about having Matthew tested. Earlier experiences with our oldest son had made us aware that social skills were stressed in the curriculum and that continued development of our younger son's interest in numbers might not be facilitated at a pace or style he enjoyed. Fall came and following through on our initial request for testing seemed the typical thing to ask. The school complied and the results raised the potentially overwhelming litany of questions:

- *What does an IQ score represent? What does it predict?*
- *In a perfect school experience should there be a spread between aptitude and performance?*
- *What do 3.5 standard deviations mean?*
- *Why are the subtests useful?*

Parents who are teachers can experience great cognitive dissonance when their comprehension of test results is not reflected appropriately in classroom practices. This was our situation and it became apparent that information was needed to present an informed opinion about our requests and to suggest a specific plan of instruction.

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It was at this point that I made a telephone call to The National Research Center on the Gifted and Talented (NRC/GT) and discovered a veritable treasure trove of information in the form of user-friendly parenting packets, Practitioners' Guides, resource lists, advocacy associations, bibliographies, guidelines, and Research Monographs for making our decisions. In short, the availability of relevant information allowed us to reexamine the academic lives of our children and our roles as parents. It validated our observations, inspired our plans, and produced anger and anxiety; particularly with regards to our older son whose aversive responses to school had been looked at in a different light up until this point. Subsequently, Nathan was tested and the results revealed a shocking misinterpretation by parents and teachers of a child who was an aural learner and socially insightful well beyond his years, and whose requests for learning how to borrow and carry in arithmetic had been thwarted for 18 months. Nathan's daily emotional breakdowns were not a function of me failing in my new parental role after all, but an unarticulated realization that he was bored and did not fit into the behavioral norms of a large second grade classroom that had its share of student behavior problems. Nathan was nearly 8 years old, yet his younger brother's strengths were being tracked since the age of 3. The importance of having timely access to appropriate information was made clearer still in a personal way.

The situations of our two sons are representative of the formative and reactive ends of the spectrum with which information from the NRC/GT can be utilized. Information on curriculum compacting and acceleration provided by the NRC/GT has had, and continues to have, an extremely formative influence on our younger son's school experience. That is to say the information was available for use as a planning tool before the school year was too far underway. In contrast, our older son benefited from information about grade-skipping and socialization issues that allowed him to "escape" a situation that did not have the wherewithal at the time to accommodate his needs.

If parents and teachers of high achieving children would recognize research as a form of history in that it represents prior events and outcomes and that it has a predictive nature, they could experience a tremendous sense of empowerment and accomplishment in their work. Teachers and parents want to be known for doing a job well. In my new parenting role, I was particularly anxious about performance, especially the nurturing issue. The saving grace was information and the way it could be used within the curriculum by convincing classroom teachers to accept its practical value with respect to traditional classroom practices and my sons' educational growth.

A major lesson learned was that timely access to relevant and accurate information is crucial to the education of young children who learn differently. Information is more effective when used early within a planning process that sets goals for the future instead of one that reacts to current classroom practices. I found as a parent that planning for the future created an alignment of teacher and parental concerns that was not easily duplicated when information was simply provided in response to an immediate curricular concern. One step towards accessing information is to make copies available of the NRC/GT Practitioners' Guides via school information/bulletin boards, the pre-K screening process, parent packets, and school handbooks.

A second lesson was that information empowers its possessor. My wife and I had gone the next step and were pursuing the recommended readings on compacting, socialization, acceleration, and identification. We became consumers of books and articles on the subject of giftedness. Initial readings were *Guiding the Gifted Child: A Practical Source for Parents and Teachers* (Webb, Meckstroth, & Tolan, 1982), *The Academic Acceleration of Gifted Children* (Southern & Jones, 1991), and *Curriculum Compacting* (Reis, Burns, & Renzulli, 1991). The NRC/GT provided a certain amount of source credibility to our programming requests. We found that research-based information, the use of specific vocabulary, and an understanding of defensible practices in the field added parity in the school-parent relationship, especially when administrators were involved or major modifications were being proposed.

A third lesson was to use information with the teacher in an informing and a supportive way. Teachers are major direct service providers to children and influencing the educational experiences of my sons was not to be accomplished with a parental emotional wish list fraught with anxiety, but with concise, well defined, appropriately placed, factual information. If the NRC/GT could present hard data in a user friendly format, I as a parent could do the same.

And fourth, we watched in amazement how the consistent use of information over time creates geometric effects upon its intended purposes. Information on curriculum compacting given to the first grade teacher was used with our younger son, resulting in his mastery of the fifth grade mathematics curriculum without gaps in his knowledge. In second grade, he participated in the fifth grade math class, qualified to take high school algebra, and expressed an interest in taking "real" literature and science with his brother who was to be in sixth grade. What unfolded in June of that year was a 12 person Pupil Personnel Planning Team meeting that resulted in the Assistant Superintendent overruling the Director of Special Services' "no" vote on subject advancement. I believe this outcome was due, in part, to the articulated perspectives of the middle school teachers who had read much of the NRC/GT literature, observed its effect on our son's primary years, and were supportive of the proposal. The availability of research had changed attitudes and classroom practices among the staff which paved the way for Matthew's particular needs and other children's as well. Informed teachers can be fearless advocates despite central office policy.

Our youngest son entered sixth grade in the Fall of 1996, although he has completed the 6-8 curriculum and high school courses of algebra, geometry, algebra II, and chemistry. He loves school and the options he has now, one of which is to use the time made available from curriculum compacting to reduce his schedule and manage a fish farm breeding project at the high school.

In retrospect, the process my wife and I went through appears so very simple because an informed viewpoint clarifies a plan of action. It is not simple, however, because the process of becoming an informed parent or a teacher about high achieving students is fraught with sources offering good intentions, ineffectual empathy, misinformation, and little direction. Thus, two caveats in the "age of information" are: as a consumer of information you must determine the kind of information you need and actively seek it from a reliable source. And, two, do not presume the application of information in the classroom to be as easy as access to that information. To these ends contact with The National Research Center on the Gifted and Talented was a step in the right direction.

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Cluster Grouping Coast to Coast

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Cluster grouping is an administrative procedure in which identified gifted students at a grade level are assigned to one classroom with a teacher who has special training in how to teach gifted students. The other students in their assigned class are of mixed ability. Differentiated instructional opportunities allow gifted students to interact with their intellectual as well as their age peers. Through cluster grouping the intellectual, social, and emotional needs of the gifted students can be addressed.

Cluster grouping has become increasingly popular as a programming option to meet the needs of gifted students in heterogeneous classroom settings (Gentry, 1996; Hoover, Sayler, & Feldhusen, 1993). In 1993 current cluster grouping practices were examined in a nationwide survey. The purpose of the Cluster Grouping Survey was to determine how schools were implementing this programming practice.

The Cluster Grouping Survey had two components. The first, a general survey on cluster grouping was sent in August 1993 to 131 Collaborative School Districts associated with The National Research Center on the Gifted and Talented (NRC/GT) that noted in their

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application form for the NRC/GT network that their districts used cluster grouping within the regular classroom as part of the organizational structure of their gifted and talented program. Responses were received from 53% (n=69) of these Collaborative School Districts representing 29 states. The second component of the Cluster Grouping Survey was a more detailed survey sent in September 1993 to 61 Collaborative School Districts that indicated cluster grouping was practiced in their districts at that time. Responses were received from 38% (n=23) of these districts representing 15 states.

The first Cluster Grouping Survey presented three questions. Respondents were asked if their school district had a policy on cluster grouping. Of the respondents, 17% indicated having an official policy, 17% did not, 62% said they had no official policy, but that cluster grouping was practiced.

The second question posed was "How does your district define cluster grouping?" Multiple definitions were given. Less than 1% indicated they had state definitions, while 1% noted that students in specific programs or who had specific abilities composed a cluster group. A majority (98%) of the responding schools used a certain number or percentage of students to define a cluster group. Examples ranged from 4-6 identified gifted and talented students in a heterogeneous classroom, to a group of 3-5 students of the top 5% students clustered together. In a large city, 33% of each cluster class were students identified as gifted and talented. Another school district defined cluster grouping as a group of five or more identified students in a classroom, plus any "watch and serve" students (students who are displaying high potential).

The third question on the first survey addressed the grade levels where cluster grouping occurred. Over half (51%) of the respondents indicated that cluster grouping occurred most frequently in the upper elementary grade levels (grade 3-6) in their districts. Of the districts, 5% reported using cluster grouping in kindergarten and ninth grade, 32% reported the use of cluster grouping in the first, second, seventh, and eighth grades, and 12% indicated cluster grouping occurred in the tenth, eleventh, and twelfth grades.

The results of the first Cluster Grouping Survey indicate that while some school districts around the country practice cluster grouping, many did not have official district or school policies regarding its use. Most definitions of cluster grouping were based on a number or percentage of identified gifted and talented students within a regular classroom. The first survey also showed that cluster grouping is a practice used at all grade levels, especially in the upper elementary grades.

The second Cluster Grouping Survey examined a variety of cluster grouping issues in 23 school districts nationwide using this program practice. These issues included: the selection process of cluster students, special populations represented, selection and training of cluster teachers, differences between cluster and non-cluster classrooms, program options used, reactions to cluster grouping, academic and social/affective effects of cluster grouping, and advantages and disadvantages of cluster grouping. The respondents of the survey included: director/coordinator of gifted and talented programs (n=12), instructional/educational specialist (n=4), gifted and talented teacher/specialist (n=2), assistant superintendent (n=1), principal (n=2), school psychologist (n=1), and cluster teacher (n=1).

Selection Process of Cluster Students

Methods for identifying students for cluster groups varied greatly from district to district. The methods listed were those used by many districts nationwide to identify students for other types of gifted and talented programming. Testing included use of the *Stanford Achievement Test (SAT)*, *Wechsler Intelligence Scale for Children-Revised (WISC-R)*, *California Test of Basic Skills (CTBS)*, other IQ achievement tests, and placement tests. Teacher input was sought using behavioral observation forms and recommendations. Parent input was gathered through recommendations and informational forms. Grades and writing skills were included in academic performance, while other considerations examined motivation and student awards.

Special Populations

Responding schools were also asked about the special populations participating in their cluster grouping programs. The following shows the percentage of schools indicating the special populations served:

- Native-American– 39%
- African-American– 52%
- Hispanic-American – 52%
- Asian-American– 52%
- Pacific Islander– 17%
- Economically Disadvantaged– 82%
- Limited English Proficient – 30%
- Learning Disabled– 65%
- Physically Disabled– 35%
- Underachievers– 65%
- Emotionally Disturbed– 35%

Selection and Training of Cluster Teachers

Principal discretion was the method noted 40% of the time in the selection of the cluster classroom teachers. Other selection methods included: rotation of regular staff, volunteers (based on interest and willingness), selection after training, former gifted and talented teachers, and peer panel selection. Of the respondents, 22% indicated that teachers needed to be willing to receive training in order to be a cluster teacher. Responses varied from state mandated teacher training to none. Training included district sponsored inservice, ranging from extensive (after school workshops, one week workshops, 1-3 days for beginning cluster teachers) to one day presentations. Additional methods of training cluster teachers included: attending state conferences and/or University of Connecticut—Confratute, graduate courses, reading articles, using gifted and talented consultants, and visiting other schools. Although several respondents (*n*=4) indicated no ongoing inservice training, a majority (60%) of the districts offered some type of training. These included: monthly meetings, a quarterly study group and team meeting, gifted/talented inservices, cluster network/inservice days, and four follow-up training sessions per year. Occasional workshops and seminars, and attendance at state conferences were also noted. The districts with the most inservice support reported the greatest satisfaction with cluster grouping and the most positive reactions from teachers, administrators, parents, and students.

Differences Between Cluster and Non-Cluster Classrooms

All of the schools indicated that the major difference between the cluster and non-cluster classroom was in the greater "qualitatively different" instruction that was occurring. This included the accelerated presentation pace, the increased depth of enrichment activities and presentation of issues, and a compacted core curriculum.

Program Options Used

Content differentiation, thinking skills, and content enrichment were the most widely noted options used in the responding school districts' cluster grouping programs. Almost all (99%) of the respondents indicated using content enrichment, 91% used thinking skills, and 74% used content differentiation in the cluster classrooms. A variety of content differentiation methods were listed: more acceleration, compacting the core curriculum, more indepth enrichment, and more complex content. Also mentioned were acceleration of presentation pace, a greater focus on higher level thinking and reasoning skills, more pretesting of materials, and extensions of all lessons using higher order thinking activities. One district stated that the level of awareness of individual needs was greater, that collaborative teaching (cluster teacher and gifted and talented teacher) was stressed, and that whole class enrichment of all K-12 classes was ongoing.

Reactions to Cluster Grouping

Although all of the responding school districts indicated positive reactions of most teachers, administrators, parents, and students to cluster grouping, 30% also noted some mixed reactions. While one respondent said that ". . . by recognizing that high ability students have educational needs that must be addressed daily, teachers were given permission by the 'system' to utilize effective strategies and techniques every day with those students in their classrooms," another said some teachers were philosophically opposed to gifted programs in their district. One respondent noted, "Teachers continue to express concern about the difficulty they experience in providing differentiation within a classroom with a wide range of possibilities." This was less of a problem in schools that limited this range in the cluster classroom.

All of the school districts reported positive reactions by parents to cluster grouping, while only 1% also noted some negative reactions. Parents frequently commented on the positive reactions to the accelerated pace and instruction in the classroom. They believe that cluster grouping was successful in meeting their children's academic needs. Parents preferred cluster grouping to total heterogeneous classrooms and saw the need for grouping to ensure provisions for high ability students were available. One respondent stated that parents of less able students in the cluster classroom had commented on the improved attitude of their children toward school, while another indicated that parents of non-identified students often requested their children be placed in a cluster classroom. Negative reactions included remarks that some parents didn't see anything different happening; some parents of non-identified, high-achieving students didn't like it; and some parents preferred homogeneous grouping in specific content areas.

The reaction of administrators to cluster grouping was mixed, but most (69%) of the respondents gave positive reports. "Supportive," "favorable," "helpful to everyone," "proponents" were remarks noted. One respondent stated, "The administrators have led the way in allowing us to do whatever is best and works to benefit the students." Most respondents, however, gave a variety of administrative reactions including: active support, supportive if good things are happening for kids, and ignoring policy. One respondent stated, "Those with sufficient understanding of the needs of the g/t students support the grouping. Other responses vary dependent on personal beliefs and experiences." While administrative support was seen by several districts as critical to the success of cluster grouping, 13% reported negative responses by administrators. Administrator resentment of a special group, scheduling difficulties, and strong biases against programming for gifted and talented kids were comments given.

Nearly all (90%) of the respondents indicated gifted students were very positive about being in a cluster classroom. Comments such as

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"excitement with moving through material without having to wait for others to catch up," "enjoying their intellectual peers," and being "very eager to be challenged" were related. Only two negative remarks were given. One indicated a few students developing a "superior" attitude, and the other was a student's social separation from friends.

Academic and Social/Affective Effects

Cluster grouping may have a positive effect on the achievement of all students (Gentry, 1996). This was the case in the Cluster Grouping Survey. Three categories of responses developed from the question, "What academic effects of cluster grouping have you observed?" For identified highly gifted students, the academic effects were all positive. Respondents listed positive effects for this group of students, including: more time to work together on appropriate tasks; higher class expectations; more indepth and quality products; increased motivation and learning; more opportunities for above level instruction; increased student responsibility and level of change, and finally, more time to work with intellectual peers. Positive effects were also noted for the whole class. Remarks included: ". . . others in class are stimulated," "class expectations are higher," "raises everyone's level of achievement," and "everyone benefits." Teachers also recognized the positive impacts. A typical teacher response stated "cluster grouping gives them [teachers] an opportunity to pace the curriculum faster, that training has helped instruction, and there is a better understanding of the learning process and how to challenge kids." Another response indicated cluster grouping "compels the teaching staff to do more formal differentiation of the curriculum," thereby increasing the academic levels of all. In a major city, achievement gains continued to occur in schools with cluster grouping programs that had clearly stated goals and objectives, ongoing staff development, curriculum differentiation, school-wide enrichment for all students, and parental involvement (Duncan, 1989). These findings concur with those in Qualitative Extension of the Learning Outcomes Study (Delcourt & Evans, 1994). Students in this grouping arrangement (Within Class) as well as Pull-Out programs "felt more capable in their academics, preferred more challenges in the classroom, and were more likely to want to work independently than their peers in Separate Class programs" (p. 4).

Except for two responses that indicated negative effects of cluster grouping (possible development of cliques and some "elitist" tendencies in cooperative learning groups), all the responses to the social and affective effects of cluster grouping were positive. These included: a focus on self-management and decision-making skills fostering a climate of caring and cooperativeness; a support system among peers; a productive, helpful environment that promoted an understanding that the world has many "different" people who can all get along; a better acceptance of being gifted, better self-esteem and friendships; an increased awareness of the talents of all students; an acceptance of students who are not age-peers (cross-grade clustering); and a recognition of students' self-confidence and self-reliance. One school district reported better support for academically talented students, both from their peers and the entire staff since implementing cluster grouping.

Advantages and Disadvantages

The Cluster Grouping Survey also asked the Collaborative School Districts about the advantages and disadvantages of cluster grouping in their school districts. The responses were many and varied. From cost effectiveness (students staying in neighborhood schools, better use of limited resources and time) to viewing the classroom as a "laboratory" for staff development and instructional practices, cluster grouping was seen by 100% of the respondents as an organizational option that offered improvement in many ways.

An increase in intellectual stimulation, challenge, and level of expectations for students were advantages listed. Students were also allowed to move rapidly through the curriculum and work in their interest area. In addition, positive consequences for teachers were noted, including teachers taking more responsibility for the needs of gifted kids and allowing them to group students by need. Administratively, cluster grouping was seen as easier to observe and to guarantee differentiation. It was a more efficient delivery of services; all students at all grade levels could be served.

Advantages of cluster grouping could also be found in the affective domain. A better understanding of the gifted and talented student was found, as well as being able to offer a more challenging curriculum. Better opportunities to address the psychological needs and concerns of high ability students were noted. More and improved exposure to instruction and activity encouraged and fostered the abilities of all students. Many districts stated that expectations were higher for the whole class.

When they were asked about the disadvantages of cluster grouping, only two districts stated that they had not experienced any problems or disadvantages in their districts. Almost all (91%) of the respondents indicated difficulty in the implementation process. Several noted that it was difficult for traditionally trained teachers to change their methods of teaching. A lack of teacher training and funds for inservice were also mentioned. One respondent stated, "The move to heterogeneous grouping

. . . is very detrimental to our program. We used to be able to service kids from several programs at once. If we do that within each class, the students who need differentiated curriculum only get 1/4 the service. Collaboration time has not been built into this new plan, and teachers feel too busy to work with us." Not meeting the needs of highly gifted or high ability non-identified students through this delivery method was also a concern expressed by 1% of the respondents. Resentment toward cluster teachers and gifted students was also seen as a disadvantage. Less than 1% of the respondents expressed concerns over cluster grouping leading to tracking and slighting students in non-clustered classrooms. One respondent stated that "theory was still better than practice in some schools."

Recommendations

The Cluster Grouping Survey found that many districts around the country are using cluster grouping in various ways and obtaining positive results. Districts exploring the cluster grouping option need guidance in planning an effective program, however. Kaplan (1974) developed a list of items that need to be addressed in planning a cluster group:

1. Develop criteria for selecting students.
2. Define the qualifications of, and the selection process for, the teachers.
3. Plan the differentiated experiences for the cluster of gifted students.
4. Plan for support services and special resources.

From the responses to the Cluster Grouping Survey, it is recommended that a school district adopt a formal policy on cluster grouping for gifted students before selecting students. Coleman (1995) also suggests schools examine the attributes of true cluster grouping during the planning process. As Kaplan indicated, the selection of cluster teachers is very important. Weber and Battaglia (1982) list qualities a cluster teacher should have, including a willingness to: understand the unique attributes and needs of talented students; be intellectually alive; be creatively productive; be flexible and willing to find appropriate outlets for student products; be attuned to the process of teaching, not just the content; be a role model for students; and be able to foster positive feelings among students and faculty toward the gifted and talented program. Rogers (1991) adds that the cluster teacher must also be sufficiently trained to work with high ability students, and be given an adequate amount of preparation time. The cluster teacher should also be willing "to devote a proportionate amount of classroom time to the direct provision of learning experiences for the cluster group" (p. 4).

In planning and providing for the experiences of gifted students in the cluster group, Coleman (1995) suggests that cluster teachers use the following strategies: curriculum compacting, acceleration of the content, enrichment with the curriculum areas, interest-based learning, and opportunities to work with other high ability learners across grade levels. Delcourt and Evans (1994) state that "curricular and instructional provisions for the gifted must be carefully maintained lest they disintegrate into a no-program format" (p. 9).

Support and special services are essential components for cluster grouping to be effective. Responses from the Cluster Grouping Survey indicate the need for these services. Coleman (1992) states that a cluster teacher should have access to a consultative/collaborative teacher who is a specialist in meeting the needs of high ability students. Access to counseling services is also necessary to meet the social and emotional needs of the cluster students.

The results of the Cluster Grouping Survey support research studies (Gentry, 1996; Hoover, Sayler, & Feldhusen, 1993) that gifted students do benefit from this program approach. Planning and delivery of the services need to be carefully considered, however, if cluster grouping is to be successful in meeting the needs of high ability students in regular classrooms.

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